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"Questions in Parliament."

ONE of the most serious results of the war has been the great increase in power of the Government over the commerce and industry of the nation. Regarded as a matter of vital necessity to the successful waging of the war we are, of course, prepared to submit to the measure of control thus exercised, although it should not be forgotten that even the question of vital necessity has not been universally admitted. But when we consider the statements which are being made in responsible quarters regarding the continuation of Government control after the war, it is obviously time that we should learn exactly how much and for how long this control is contemplated. Shipowners and shipbuilders are perhaps more than any other class of business men interested in this question, the former because any growth in trade in reflected in the volume of both imports and exports and it is the shipowner who runs the vessels utilised in the carrying on of both import and export trade; and the latter because owing to the wastage of tonnage caused directly and indirectly by the war, the demand for new ships is and must remain for many years very urgent. Any large increase in our trade will, of course, tend to swell the demand for new ships. Another question closely affecting the interests of both shipowners and shipbuilders is that of the position of labour, and here again the Government has a controlling power. We have therefore made arrangements with our Parliamentary correspondent for a report of all questions of particular interest to shipowners and shipbuilders, together with the replies of the responsible ministers. Many of these are not published in the columns of the daily Press and hence the value of this feature. These reports will appear in our news section every week during the Parliamentary session under the heading "Questions in Parliament," but they will not interfere with our editorial comments upon Parliamentary matters which we shall continue to publish as hitherto.

Watching the Shipping Situation.

None too soon a salutary disposition is being developed in the House of Commons to cast a critical eye upon measures which are being adopted for the protection of shipping. The recent returns of losses from submarine activity are serious enough to awake the vigilance of members who are in daily touch with the industry. Of course, when one questions a junior Minister the chances are that one is faced with official optimism in its most dogmatic manifestations. Yet it seems to us that Mr. Houston has scored more than one point in his recent encounters with Sir L. C. Money and Dr. Macnamara. He has certainly revealed that the convoy system of protecting vessels requires very considerable organisation if an enormous loss in economic efficiency of shipping is to be obviated. This economic loss may arise from two causes. The vessels may have to be delayed in port in order to await convoy. Ships of widely varying speeds may be grouped together, but the speed of the convoy is that of the slowest vessel. An alert, informed mind, is alive to these vital matters, and the better they are handled the more service will the nation obtain from its shipping. The duty of the House of Commons is not so much to do things as to see that things are done, and it is to be hoped that those members who have been active on these shipping topics will continue their vigilance.

Developing Export Trade.

One of the most difficult of the post-war problems will be to find ways and means to pay the interest and sinking fund on our colossal national debt. Already many suggestions —practical and otherwise—have been put forward, and one of the sanest is that by the development of industry it can be made sufficiently to bear the burden of increased taxation. The war has led to the creation of a vast amount of additional plant, and the problem will be how to keep it running when the requirements of the war no longer exist. Obviously there must be a large expansion of our export trade, and for this it will be necessary not only to encourage an intensive cultivation of existing markets, but also to find new ones. With a view to this, a proposal of the greatest interest to shipowners has been put forward by Mr. G. C. Mandleberg, of J. Mandleberg & Co., Ltd., Pendleton. It is proposed to organise British manufacturers and producers into a body to be called the British Manufacturers' Corporation, to develop overseas trade by the employment of representatives abroad who will work in the interests of members of the corporation. These "agents in charge" will be men of first-class ability, possessing thorough knowledge of the business conditions in the different foreign countries to which they will be appointed and where they shall be resident, and their duties will be to find and appoint the right men as local selling agents for individual firms, obtain first news of fresh trade openings, and generally to superintend the interests of all firms in the corporation, thus giving them the advantages of a branch in many parts of the world without the expense of establishing and maintaining it. The scheme has met with considerable support in Lancashire, and a provisional committee is to be formed to consider the details of the scheme.

American Building Risks—A New Danger.

We have several times referred to the difficulties which beset underwriters who accept lines on building risks in America. We have pointed out that while the old yards handle their contracts as capably as the best establishments in this country, the lack of experience, which is a necessary evil in the newer undertakings, presents a factor of hazard which it is difficult for underwriters to assess. One of the principal risks which enter into a building insurance is that of a bad launch, and it is here that experience in handling a vessel on the ways counts tremendously. We understand that there have been several mishaps at launches in the States recently, and that claims are now coming before underwriters in consequence of these accidents. The conditions on which the vessels are insured go some way towards lightening the burden of the underwriters on these risks, since the value in the policies is the full contract price, and the claim is adjusted on that basis. But even so the settlements for these disasters will not be light, and the small rates at which these risks were accepted at the time they were written do not allow of much provision being made for a series of casualties of this nature.

Commencing Dates for Insurances.

It is undoubtedly a great advantage to all concerned in the insurance of fleets that the policies should run from one date concurrently. The practice of putting each steamer forward from various dates, spread over a year, is much more laborious as far as clerical work is concerned, underwriters' figures are less easily kept and the confusion of overlapping contracts is liable to occur. There is one point alone which would seem to prevent owners from adopting the single commencing date as a general habit. To pay the premium on each steamer as it goes forward may be a simple matter, but to find the premiums for the whole of the fleet on one particular date is a financial operation of some magnitude. It is true that deferred payments are easily arranged, but the recent adjustment by which discount on deferred premiums was made 8 per cent., as compared with 10 per cent. for cash payments, involves a loss of 2 per cent. on the premiums when deferred payments are adopted. The difficulty is one that could be overcome by the granting of the old rate of discount on the renewal of fleets for one set of policies. Provision could then be made for subsequent renewals on the deferred basis without any financial difficulty being experienced. We are not aware whether this concession has been asked from underwriters by an owner, but the suggestion is one which would undoubtedly be given serious consideration should it be put forward.

Canadian Shipbuilding.

Much as people here were not so very long ago inclined to doubt the likelihood of big shipbuilding developments in Canada, there is now no disputing the fact that of late the industry has made marvellous progress there. To encourage it, the Government passed an Order in Council granting a 99 per cent. drawback of Customs duties paid on materials used in the original construction of ships of over 500 tons gross for outside registry, and, if the proposal to vote a bounty of from 12s. to 20s. per ton deadweight is adopted, so as to offset the lower cost in normal times here, a further great expansion is certain. It is estimated that at present there are no fewer than 200 vessels in hand or on order for the Imperial Munitions Board and private companies on the Atlantic and Pacific coasts, the Great Lakes and the St. Lawrence, the chief difficulty being the inadequate supply of steel. About a year ago, as we announced at that time, a Shipping Encouragement Act was passed by the Legislature of British Columbia, the objects of the measure being, among other things, to establish shipyards in that Province by the Government offering to lend 55 per cent. on the cost for a term of five years; to lend the same percentage on the security of the ships when built; and, while engaged in carrying British Columbia products, to guarantee a net earning of 15 per cent. on the total cost. Another Bill of the kind has also, we hear, been introduced into the Nova Scotian House of Assembly at Halifax, though a Commission is first to investigate existing facilities, to engage whatever technical or expert assistance is necessary, and to make suggestions tending to the adoption of practical rules and regulations for the encouragement of the industry within the Province. They evidently mean business in the Dominion, and circumstances arising out of the war should be of invaluable assistance towards this end.

Inland Water Transport.

One of many results of the war has been a concentration of interest and effort on the development of inland waterways, so as to relieve, in this country at all events, pressure on the railways. Even the All Highest has in public addresses impressed Austro-German authorities with the importance of this means of communication. As regards the United Kingdom, Sir Maurice Fitzmaurice, Chairman of the Canal Control Committee, has reported of late to the Board of Trade satisfactory progress in this connection. Every canal in the country is now under control, and the number of boats capable of carrying traffic has been greatly increased. A further development, he says, is, however, a matter of necessity, and it is hoped to utilise the services of returned soldiers in making the most of the advantages available. In the United States, too, attention is being given to facilities of the kind. A comprehensive programme has already been worked out by the Shipping Board, and a feature of the scheme is the construction of a great fleet of steel and wooden barges. In order to make the plans effective a survey of the country was recently carried out, so as to determine the carrying capacity of rivers and canals, and the needs of various sections. The Department of Commerce, in view of the urgency of the question has, in fact, made it known that it is essential to use water routes whenever and wherever possible, and the railway interests are now endeavouring to transfer part of their traffic to the waterways as a war measure. This is probably to anticipate action by the Government should that ultimately be considered necessary.

Control of Grade.

A Parliamentary storm seems to be brewing over the Imports and Exports (Temporary Control) Bill. When the second reading debate is reached, the Government will hear voiced the concern of the commercial classes at the proposal giving controlling powers for three years after the war. Six members have tabled motions to reject the measure. Others have put their names to a motion that the House should decline to proceed with the Bill until the Prime Minister has received a deputation from the Commercial Committee of the House, who desire to lay before him a report unanimously adopted by that committee upon the Government control of trade. Substantial commercial men are associated with the opposition to the measure. Amongst the names attached to one or other of the motions of opposition are those of Sir Archibald Williamson, Mr. Holt and Mr. Samuel Samuel, who in various ways are connected with shipping. The prospect of bureaucratic control projected into matters which vitally concern that industry for a period of three years after the war is quite preposterous. We do not contend for a moment that the day on which peace is signed that an automatic relaxation should take place of all the elaborate artificial arrangements which the war has brought into the organisation of commerce. But that the process should occur with all convenient expedition is absolutely imperative. Competent commercial men contend that six months is a sufficiently long period for the Government control to be exercised. The Government would be prudent to accept their advice.

National Repair Yards.

The announcement has been made by the political correspondent of *The Times* that the Admiralty have decided not to build four national shipbuilding yards as was originally announced, but three, all of which are to be on the Bristol Channel. It is understood, however, that a site may be secured in South Wales near the three yards already sanctioned for the purpose of ship-repairing. It is well known that at the present time there is a large amount of ship-repairing being done; many vessels suffer injuries as a result of contact with mine or torpedo which do not prove fatal, and these are eventually repaired and the vessel returns to service; moreover, vessels are now being run in a state which would not have been permitted before the war, and these frequently require temporary repairs to fit them for further service. In consequence of this large volume of repairs, delays are often caused, either due to lack of facilities to carry out extensive repairs, lack of docking or berthing accommodation, or lack of labour or material. The Government would thus appear to have been better advised in their decision to set up a ship-repairing yard than they were in their decision to set up shipbuilding yards, but it is certain that such a yard will take many months to construct and fit out in view of the necessity for docks, wharves, &c., and we should like to feel assured that every ship-repairing yard in the kingdom has been fitted out to its maximum capacity and that it lacks nothing either in men or material before this new Government policy is proceeded with.

The Shop Steward Question.

The national negotiations on the shop steward question between the Engineering Employers' Federation and the Allied Engineering Trade Unions, have taken the course they were expected to take by the majority of moderately well-informed people. A good deal of nonsense has been written and spoken on the subject during the past few weeks, and the effect of much of it has been distinctly unsettling. Employers have, for example, been called old-fashioned and stiff-necked for declining to treat with the stewards. Their objection to treat with these representatives of the workers is not, however, a whit stronger than the objection of the trade unions themselves to the interference of the stewards in matters with which they are not entitled to deal. Shop stewards have no trade union authority to negotiate with employers, and employers, therefore, cannot negotiate with them. In the national negotiations, which began on Friday and were continued this week, the idea seems to be to alter trade union rules and national agreements between employers and employees in such a way as to permit of the bringing in of shop stewards as a new link in the conciliation procedure. From the employer's point of view, and also from that of the trade unions, it would be dangerous to give shop stewards the local powers which some of them desire. But the changes contemplated are in the right direction, and they indicate that, at any rate, in higher labour circles there are no illusions on the subject. Employers have no objection to shop stewards, and do not, as a matter of fact, pick and choose, or attempt to pick and choose between labour's representatives. They follow the procedure laid down in their agreements with the trade unions, and treat with the representatives empowered by rule to negotiate with them. It is, therefore, for the trade unions to say whether shop stewards shall, or shall not, be "recognised"—not for the employers.

Herr Ballin's Latest Scheme.

Now and again it is, perhaps, just as well to take note of what our enemies propose to do when (after the war) conditions are more normal than they are likely to be for some time to come, even, though, as some financial authorities on this side of the North Sea assure us, the restoration of peace will not bring Germany anything but bankruptcy. Of late—in fact, ever since the alleged rupture of relations with the All-Highest—Herr Ballin, because of a plain-spoken statement that if the war continued German overseas trade would be ruined for a century, has not been much in the public eye, or mind. Nevertheless, according to report, he has not been inactive—behind the scenes, as it were. He is, indeed, said to be responsible, in conjunction with Herr Gwinner, the managing director of the Deutsche Bank, and chief promoter of the Bagdad Railway, for the creation of a vast combine of the principal German financial, shipping, and manufacturing interests to rehabilitate their shattered position in international trade. One important factor is, apparently, being relied upon to ensure success for the project, namely, the obtaining of the necessary passports through neutral channels, to enable the agents of the "Company for Oversea Enterprises" to travel. The preliminary capital has been fixed at £1,000,000, which will be multiplied many times over as required, and, among the objects aimed at, the construction of harbour and dock works is not the least important. All things considered, this is a scheme of far-reaching design, and one which our own commercial and shipping interests would do well to recognise now that it is in progress.

After-War Shipbuilding.

The average trade unionist's insistence on the restoration of pre-war conditions is, of course, largely tactical, in the sense that, while he considers complete reversion to be one of his many "rights," he is not unwilling to barter it, in part, away for something which is, in his opinion, better. But if workers keep their eyes open it must be plainer to them every day that British industry, as a whole, is rapidly out-growing its pre-war conditions. Shipbuilding is, for instance, a vastly different affair from what it was in July, 1914, and if anybody imagines that it is going to revert to its old organisation when the hostilities come to an end, he is singularly ignorant as to the facts. In spite of what some people say, and of what many others hope, standardisation has taken a firm grip of the industry, and is bound, we think, to lead practically to a revolution in, at any rate, the practice of building cargo boats and cargo liners. At present, it is, even in the United States, only in its infancy. In due course, shipbuilding and engineering will begin at the steel works, and existing shipyards and shops will become huge places of assembly for materials prepared elsewhere. The production of tonnage will, in that way, be very greatly expedited, and all records of quick construction will go by the board. How could pre-war conditions be applied to an industry changed to that extent? The truth is that they would be wholly inapplicable. It is obvious also that the industry cannot be made to revert in order to accommodate pre-war conditions of employment, for there is, and will continue to be for some years, a great world need of shipping. If trade unionists were wise they would stop talking about pre-war conditions, and give us instead their views as to the kind of organisation which the new conditions call for.

Turbo-driven Auxiliaries.

The success of the small high speed turbine for the driving of auxiliaries on board ship is now assured. For the generation of electric power the turbo-driven sets have many advantages over those operated by reciprocating engines, amongst which may be mentioned the great saving in space and weight obtained. With the great developments in the use of electricity on board the modern liner the dimensions of the reciprocating engines required are found to be prohibitive, and due to this reason, and also to the marked superiority in economy of the turbine and its low cost of operation, it is gradually displacing the older type of engine. For purposes of boiler feeding, the turbo-pump has proved very satisfactory, and is now being fitted in conjunction with reciprocating pumps in a number of vessels. It is probable that in the near future, as greater experience is obtained, the present slow speed reciprocating pump will be gradually eliminated and this will result in a remarkable saving in space and weight. For other purposes,

such as forced draught fans, &c., the turbine is eminently suitable on account of its simplicity and absence of wear. In turbine-propelled vessels with large numbers of auxiliaries, good use can be made of the exhaust steam not available for feed heating by making it do work in the main engines. The absence of grease or vapour oil in the steam makes filtration of the feed water before entering the boilers unnecessary.

HOLLAND AND DEFENSIVELY ARMED SHIPS.

FROM first to last during the war the Netherlands Government has consistently excluded defensively armed British merchant vessels from its ports. Its decision has been maintained on the ground of its exceptional and rigid conception of its obligations as a neutral. Perhaps its geographical proximity to a jealous and ruthless neighbour helped to add inflexibility to its attitude, but when we read the diplomatic correspondence on the subject, published this week, we are astonished that the unmitigated ferocity of the submarine campaign should not have caused Holland to relax the rule in the altered circumstances. We remember that in March of this year the British ss. *Princess Melita*, with a gun mounted aft, arrived at the Hook of Holland. She feared German submarines, but she was ordered out of port. Only after dropping her gun outside territorial waters was she allowed into Rotterdam. That is the one specific case cited in the diplomatic correspondence. No other government, except perhaps that of President Carranza of Mexico, has found itself obliged by the rules of international law to deny the use of its ports to merchant vessels armed only for defensive purposes.

We observe that Mr. Balfour in his closing dispatch characterised the rule adopted by the Dutch authorities as "unnecessary and unneutral." Let us look at the theory which they adopted and the manner in which they applied it. When the war broke out the Netherlands Government issued its proclamation of neutrality. It contained this provision: "Warships of a belligerent and vessels of a belligerent assimilated to warships shall not be admitted within the jurisdiction of the state." The natural interpretation of the phrase "vessels assimilated to war ships" covers auxiliary cruisers actually put to belligerent uses. In such a sense the British Government read it, but the Dutch Foreign Minister, M. Loudon, insists over and over again that it extends to merchant vessels provided with an armament. Although defensive in its purpose, he nevertheless sees in the armament a capacity to commit acts of war. He says, in a dispatch of last April, that in its geographical position the Netherlands could not ensure respect for the neutrality of its territory except by forbidding access to every armed vessel. "This exclusion on the one hand," he proceeds, "safeguards the country against any concealed aggression. It prevents on the other hand acts of violence between the belligerents from being committed within our territorial waters. Lastly, it offers to each belligerent the most effective guarantee that their adversaries will not succeed in utilising some part of this territory as a base for naval operations."

Lord Robert Cecil, in a dispatch in May, demonstrates in our view the untenability of these arguments. Merchant ships defensively armed are singularly unsuited for committing acts of aggression in foreign ports. If belligerents were anxious to commit acts of violence on each other they would scarcely use this category of vessel for the purpose. Moreover, it is the duty of neutrals themselves to see that their territory is not converted into a base for belligerent action. To contend that a vessel armed solely for defensive purposes is assimilated to a warship is straining an argument which will not bear the test of facts. Lord Robert enumerates the essential attributes of a merchant ship defensively armed in relation to a warship—control, external marks, discipline, lack of commissioned command. It is futile to contend, with these differences in mind, that the merchant vessel is assimilated to the warship. The Netherlands Government do not call in question the right of the merchant ship to use defensive armament at sea. Some such doctrine has been evolved by German writers, but all that the Dutch authorities claim is the right to exclude these defensively armed vessels from their ports. Holland is a sovereign state with full authority to regulate her ports, but the actual working out of this exceptional rule of neutrality inures to the disadvantage of British shipping. It is on that ground that the British Government complains of the absence of the perfect impartiality which ideal neutrality implies. If ever the old doctrine of the legitimacy of self-defence by merchant ships was justified, it is to-day in the presence of the submarine campaign.

SHIPBUILDING'S BIGGEST LABOUR QUESTION.

IN view of the fact that many new shipbuilding yards and important extensions of existing establishments are definitely projected, the Shipbuilding Employers' Federation, the Shipyard Joint Trades, and the Boilermakers' Society appear to be singularly easy in their minds about where workers are to come from for them all. Very likely we do the employers an injustice in assuming that they are easy in their minds on the subject; it may be that they are so short of men now that they are afraid to think of what the position will be when the war comes to an end. But we do the trade unions very little injustice in taking it for granted that the prospect does not alarm them, for, so far as is known, none of them has given the matter the slightest serious thought. They have no plans for adequately increasing the number of workers, and, taking what they do as an index to what they think, their idea seems to be to let the industry re-start exactly where it left off when the war began. They do not like dilution or interchangeability, and are as keen as ever to keep the unskilled and the semi-skilled worker out. Some of them are not, moreover, as friendly as they might be to the returned soldier, the "black squad" in one important district quite openly and frankly taking exception recently to their employment on oxy-acetylene welding plants.

The whole body of skilled shipyard workers seems to be, in fact, pretty much of the opinion they were before the war came. They appear to think that the activity of the British shipbuilding industry—the biggest, be it noted, in the world—ought to be determined by the limits they choose to put upon the number of available craftsmen. The number of apprentices must be definitely limited, and no side wind must be allowed to blow into their crafts, even maturer workers whose capacity for skilled operations is not doubtful. At the moment all pre-war rights, customs and practices, which had the effect of restricting output, are supposed to be suspended. Assuming that they really are, and that their suspension is temporary, it is only necessary to restore them—in the mind's eye—in order to complete the picture. With rigid lines of demarcation, apprentices limited, all men who have not served apprenticeships barred, output restricted, and overtime abolished, shipyard skilled labour's available force will be alarmingly inadequate to post-war needs. With the war's wastage written off, it will, in fact, be less than it was in 1913, and in 1913 it was, as everybody knows, far below the requirements of the normal industry.

What the actual requirement of the post-war period will be is not easy exactly to foretell. Next year, the expectation is that about 3,000,000 tons of new merchant shipping will be produced. Taking a risk, we estimate that not very long after peace terms are signed there will be visible mechanical provision for, at least, 5,000,000 tons a year. If standardisation makes the progress some people believe it will make, the total will be even greater. Is the idea of the shipyard trade unions really and truly that the capital fixed in these vitally necessary plants—for ships will be a vital necessity of the post-war period—should remain unproductive? It looks, admittedly, as if it were. We prefer, however, to think that appearances are deceptive, and that in reality the unions are of the mind they are simply because they do realise the importance of

this question. It is to be hoped that sooner or later they will realise it, and that when they do, they will let no unreasonable regard for the dignity of Labour interfere with their common sense. The wise thing to do is to seek an agreement with the employers which will conserve the rights of the crafts and at the same time give the shipbuilding industry the necessary freedom to expand.

As a rule, when advice of this character is offered to workers, the adviser is told that his effort is "a capitalist dodge." The description is, however, far from true of this advice. In fact, we are not offering advice at all, but merely indicating the course which anybody possessing common sense and full knowledge of the facts would, on consideration, naturally follow. When the "handy man" was evolved, the Amalgamated Society of Engineers declined to have anything to do with him or to make any bargain with the employers about him. In the light of present-day practice, was that wise or otherwise? In 1902 the same society rejected the Premium Bonus Memorandum, which proposed to give it a say in the making of the conditions under which the system was worked. Has that aloofness profited it any? A year or two later it was offered the one break on a 51 hours' week and rejected it. Its desire was for a 48 hours' week. The Ministry of Munitions is now introducing the one break on a 50 hours' week, and the workers are expected to be grateful for the concession.

Trade union history is full of short-sighted mistakes of this character, and it is to be hoped that the shipyard trades will profit by them. The time is ripe for a conference with the federated employers on the general question of post-war conditions, and one should, in our opinion, be convened without delay.

CARGO SHIP LINES OF SIMPLE FORM.

THE necessity of obtaining acceleration in production has directed the attention of naval architects to the possibility of simplifying the forms of cargo ships so that some of the processes in construction which meantime require the time and attention of skilled men can be obviated as far as possible. Towards obtaining such simplified forms several authorities have been at work. Naval Constructor William McEntee, who succeeded Rear-Admiral Taylor as superintendent of the Washington tank, read a paper on the above subject at the recent meetings of the American Society of Naval Architects and Marine Engineers. In this he describes the types of models experimented upon, and gave the results obtained in terms of horse-power. (This paper is reproduced on pages 564–567.)

The tendency in ship construction for a long period has been in the direction of simplification, at least in the externals of ships; the internal arrangements being generally more complicated than ever, especially in warship work. Little attention has, however, been given to the under-water form, in the way of procuring some shape which, whilst being easy to propel, is also easy to construct. Mr. McEntee proceeded in his investigation on the principle that the simplification of form requires the use of plain surfaces at right angles instead of curved surfaces, wherever possible. Where curvature is unavoidable the simplest of curves, the circle, should be used. All curvature should be in one direction only, surfaces of double curvature should be avoided.

These considerations led him to the adoption of a mid-section formed by two vertical lines and a horizontal line at the bottom, the corners or bilges being rounded off by circles of suitable radius. The sides and bottom were flat surfaces carrying the full midship section well forward and aft, making, therefore, the parallel middle body extend as far as possible without excessive increase in resistance. Forward, the entrance was formed by gradually decreasing the width of the ship, keeping the bottom flat and the sides vertical, the bilge being formed by a quarter circle of constant radius equal to that used for the middle part of the vessel. Aft, the same general idea was held to, the sides being vertical and the bottom flat, the bilge being still the constant radius adopted midships and forward.

Mr. McEntee found that such modifications in the forms which he designed had comparatively little effect on resistance, and that in some cases the models with simplified lines gave better performances than those of the same dimensions, but of conventional form.

In the August number of our contemporary, *International Marine Engineering*, appeared an article dealing with the subject of straight-lined ships. The writer of the article had been directed by the president of the shipbuilding company of which he is naval architect to evolve a form which would allow, to the limit of practicability, the "fabrication" of the greater portion of a vessel's structure in structural shops. With this end in view a ship form, straight-lined in every direction, was designed. The bilge was rectangular, the sides vertical and parallel for a great part of the length, terminating in a V-shaped entrance and run. This was followed by rounding the bilge to a radius and slightly rounding the shoulders. The resistance of these models proved to be abnormal. Ultimately forms were evolved which, while still retaining the straight-line idea, approached more nearly ship form. At the mid-section a curved bilge was associated with vertical sides and horizontal bottom. This round at the bilge was continued forward and aft. From the keel to this round the frames for the whole length of the form were straight, and above this radius the frames were again straight. It was found that quite satisfactory results, from the resistance point of view, could be given by these straight-lined forms with rounded bilge.

The introduction of this round bilge requires that frames should be bent as in present practice. It would be of decided advantage could the straight frames be worked in with absolutely no curvature. This point has also received attention. Prof. Sadler has made experiments with straight-lined ships, and these seemed to indicate that the introduction of a rounded bilge was desirable. In this respect his results may be questioned, as it is possible to obtain reasonably good results with absolutely straight sections, both forward midships and aft. Such will introduce a decided knuckle in the sections forward and aft, but the saving of bending will make possible the "fabrication" of almost the whole of a ship's structural material. A "fabricated ship" has been defined by Mr. R. M. Robinson, of the American Society of Naval Architects and Marine Engineers, as a ship on which the work of punching and shaping the plates and angles and to some extent assembling and riveting is done in a fabricated shop, ordinarily employed in bridge or tank work, as distinguished from the usual practice of doing it by shipyard plant. Thus if a large part of a vessel's structure be of exactly the same form, it would be possible to prepare all the material for the parallel middle body in shops which hitherto have accomplished no ship work. The plant in these bridge-building shops is perfectly suited for ship work, and at a time like the present all the available labour which can be directed to the greater production of tonnage must be brought into requisition. By the introduction of simple forms for cargo ships and straight-lined frames, the actual building of ships will become merely the erection of material prepared beforehand in shops which have the necessary plant to undertake the cutting, punching and riveting of plates and angles.

PUBLICATIONS RECEIVED.

[*A short notice of any publication does not necessarily preclude the subsequent appearance of a longer review.*]

Lubricating Engineers' Handbook. A Reference Book of Data, Tables, and General Information. By J. R. Battle, B.S. in M.E. London: Charles Griffin & Co., Ltd. 333 pages + 114 diagrams and numerous tables. 9 in. × 6½ in. × 1¼ in. Price 15s. net.

This book which has been compiled by an American author, is the result of an attempt to publish in book form "the data from the notebook of a mechanical engineer who became associated with the oil business," and in view of the growing importance of the lubrication of machinery, it cannot be said that such a book is not required.

It will be readily admitted by all who have in any way to deal with the running of machinery that as speeds become higher and the pressures on bearing surfaces become greater, so does the question of lubrication increase in importance. The engineer who would run his machinery to the best advantage must not only be acquainted with the details of the lubricating arrangements of the plant under his care, he must also be aware of the properties of different lubricants available, the effect upon them of changes of temperature, of water and of steam, together with the many often inexplicable occurrences which lead to heated bearings and perhaps even graver troubles. Moreover, he must know that the lubricating of one class of machinery presents totally different problems to the lubrication of another class; thus the lubrication of a slow-speed reciprocating marine engine is totally different from that of a high-speed pneumatic hammer.

The author has attempted to solve each and every difficulty that may arise. After three preliminary chapters on friction, the theory of lubrication and a short history of petroleum, he deals with the various types of lubricants, their method of production, and the purposes for which each is particularly adapted. This is followed by an interesting and informative chapter on the testing of lubricating oils, illustrated by descriptions of the oil-testing machinery at the United States experimental station. Two chapters containing useful data on the weight and volume of different oils, &c., are followed by descriptions of the lubricating systems of various types of machines such as steam engines, turbines and electric motors. Bearing lubrication is then dealt with—rather late in the book in our opinion—after which the lubrication of air compressors, automobile engines, Diesel engines and various other classes of machinery is considered, each of these receiving a special chapter which will be of interest only to those connected with that particular class. The final chapters deal with the cost of lubricating and with question of specifications when purchasing lubricating oils. A very useful and complete index is appended, and should the reader desire to add still further to the data, ruled paper is bound in at the end of the book.

Throughout the text the author has interwoven various brief descriptions, formulae and illustrations relating to the various types of machinery under consideration which have no direct connection with the subject of lubrication, but which add to the interest of the book. To those who are likely to deal with many different types of machinery this book can be recommended.

BRITISH MARINE ENGINEERING DESIGN AND CONSTRUCTION COMMITTEE.

As a result of the conference convened by the Institution of Naval Architects, to which we recently drew attention (see *Shipbuilding and Shipping Record*, October 11, p. 339), a committee has been formed consisting of representatives of the various shipbuilding and marine engineering societies, the Board of Trade and the registration societies "to standardise rules governing the design and construction of marine engines and boilers upon a practical and scientific basis, so that they may be acceptable to shipowners, the Board of Trade, the classification societies and other interests concerned. The list of members has just been published officially and its personnel, including as it does consulting marine engineers, superintendent engineers of noted steamship companies, directors and managers of important marine engineering firms, and professors of engineering conversant with the practical side of marine engineering, is such that its conclusions are bound to command public confidence. There are at present four different sets of rules in force governing the design and construction of marine engines and boilers, all of which aim at securing safety and efficiency of marine machinery, and it is believed by many that one set of suitable rules having a scientific and practical basis should be secured for all purposes. It is for the preparation of such rules that the committee has been formed. The Committee is called "The British Marine Engineering Design and Construction Committee," and the list of members, together with the body represented by the member, is as follows:—

Institution of Naval Architects:—Mr. A. E. Seaton, Consulting Engineer (*Chairman*); Professor W. E. Dalby, M.A., F.R.S., Dean and Professor of Engineering, Imperial College; Mr. H. Barringer, Consulting Engineer; Mr. R. Leslie, Superintendent Engineer of the Peninsular and Oriental Company.

Institution of Engineers and Shipbuilders in Scotland:—Mr. James Brown, Director of Scotts' Shipbuilding and Engineering Company; Mr. A. Cleghorn, Director of the Fairfield Shipbuilding & Engineering Company, Ltd.; Mr. J. S. Kincaid, Director of John G. Kincaid & Co., Ltd.; Mr. W. G. Weir, Director of David Rowan & Co.

North-East Coast Institution of Engineers and Shipbuilders:—Mr. F. T. Dickinson, Chairman of John Dickinson & Sons, Ltd.; Mr. Andrew Laing, C.B.E., Managing Director of the Wallsend Slipway & Engineering Company, Ltd.; Mr. D. B. Morison, Managing Director of Richardsons, Westgarth & Co., Ltd.; Professor R. L. Weighton, M.A., Professor of Engineering, Armstrong College.

Institute of Marine Engineers:—Mr. B. P. Fielden, Superintendent Engineer, Atlantic Transport Company; Mr. T. McLellan, Superintendent, the Eagle Oil Company; Mr. W. J. Veysey Lang, Superintendent Engineer, Watts, Watts & Co., Ltd.; Mr. A. Walker, Superintendent Engineer, Strick & Co., Ltd.

Liverpool Engineering Society:—Mr. W. J. Willett Bruce, Superintendent Engineer, White Star Line; Mr. Sterry B. Freeman, Superintendent Engineer, Alfred Holt & Co.; Mr. J. Hamilton Gibson, Engineering Manager, Cammell, Laird & Co., Ltd.; Mr. J. B. Wilkie, Superintendent Engineer, Elder, Dempster & Co., Ltd.

Board of Trade (Marine Department):—Mr. T. Carlton, Engineer Surveyor in Chief.

Lloyd's Register of British and Foreign Shipping:—Mr. J. T. Milton, Chief Engineer Surveyor (*Deputy Chairman and Hon. Treasurer*).

British Corporation for the Survey and Registry of Shipping:—Mr. W. Rowan Thomson, Member of the Committee.

Bureau Veritas, International Register of Shipping:—Mr. John Gravell, Chief Representative in the United Kingdom.

Barrow District:—Mr. J. McKechnie, Managing Director, Vickers, Ltd.

Belfast District:—Mr. C. E. Allan, Director, Workman, Clark & Co., Ltd. (*Corresponding Member*).

Steelmakers:—Mr. B. Talbot, Managing Director, Cargo Fleet Iron Company; Mr. R. J. Butler, C.B., Director, John Spencer & Co.

CENTRAL ADVISORY COMMITTEE FOR IRON AND STEEL TRADES.

The Minister of Labour has appointed the following Central Advisory Committee for the Iron and Steel and Kindred Trades (Operatives), which will advise and assist the Minister of Labour on questions which affect workmen in those trades as they arise in the administration of the Employment Exchanges:—

Councillor Ivor H. Gwynne, J.P. (Tin and Sheet Millman's Association).

Mr. A. Pugh, Mr. J. Walker, Mr. W. T. Griffiths, Mr. T. Griffiths (Iron and Steel Trades Confederation).

Mr. Owen Coyle (Amalgamated Society of Steel and Iron Workers of Great Britain).

Councillor T. McKenna, Mr. H. Nixon, J.P., and Alderman P. Walls, J.P. (National Federation of Blast Furnacemen).

The Committee held their first meeting last week, when Mr. T. W. Phillips, Acting Assistant Director of the Employment Department, welcomed them on behalf of the Minister of Labour. Mr. Arthur Pugh was elected Chairman, and Alderman Walls, Vice-Chairman. The Committee then considered, among other questions, the question of the opening of new Employment Exchanges and local offices in iron and steel working districts, and a proposal that instructions should be issued that, in selecting applicants to fill a vacancy, Employment Exchange officers should give the preference, other things being equal, to a man who had been discharged from His Majesty's Forces.

ARBITRATION ON MARINE OR WAR LOSS.

From Our Marine Insurance Correspondent.

The arbitration scheme for deciding whether a vessel is a marine or a war loss, for insurance purposes, appears in a more favourable light in its final presentment than even the most hopeful of its supporters imagined from its earliest stages. The scheme is now complete, and the features which we have alluded to from time to time in these columns all appear to be included. Chief amongst these is the possibility that arbitration affords of a proportional award. According to the agreement between the Government Departments and the underwriters, which forms the Arbitration Scheme, the interested parties in the case of a missing vessel bind themselves to observe the award of an arbitrator, and to bear the loss between them in such proportions as shall seem just to him. His award is to be final and binding on all parties as to all questions of law and fact, but provision is made for re-adjustment, should any fresh evidence come to light within a definite period after the making of the award, or within six months after the conclusion of peace between Great Britain and her enemies. To guard against vexatious applications for re-adjustment, no application for this purpose shall be entertained by an arbitrator, unless, in his opinion, material evidence is adduced which was not before the arbitrator on the occasion of his first award.

The most pleasing aspect of the final conditions of the scheme, however, is not so much in the matter relating to the method of award as in the definite promise of assistance which has been obtained, through the good offices of the Board of Trade and the Shipping Controller, from the Admiralty. The promise relates to the disclosure of evidence which may be in the possession of that department, and it will be remembered that in its earlier stages the arbitration scheme appeared likely to be handicapped by the refusal to disclose any such evidence which was understood to be the attitude adopted by the authorities.

Any fears on this score are now removed by a letter from the Shipping Controller to the Institute of London Underwriters enclosing an agreement between the departments concerned with regard to the affording of evidence. The clauses of the agreement are as follows :—

I. "Subject to sub-clause II. of this clause, the fullest and most ample discovery and information shall be given promptly by all parties hereto, including the Government, who shall only be obliged to give such discovery and supply such information to the arbitrator, and all questions or disputes relating thereto, including any question or dispute as to the discovery of documents or the giving of information in the possession of the Government, shall be referred to and determined finally by the arbitrator aforesaid.

II. "The Admiralty will give the Arbitrator all information in their possession bearing on the question whether the vessel was lost by war or marine peril. Provided always that, if the Admiralty are of the opinion that the information regarding any particular ship is of such a nature that in the public interest the same cannot be disclosed, the Admiralty shall notify the arbitrator to that effect, and shall be relieved of any obligation to furnish such information to an arbitrator, and the decision shall be final, but the Admiralty will in such case give the arbitrator such assistance as to forming an opinion as to the cause of the loss of the vessel as shall not, in the opinion of the Admiralty, be detrimental to the public interests."

The granting of this facility, modified though it be by such clause II. is a great concession on the part of the Admiralty. It will be noticed that where it is considered impolitic to reveal any evidence that they may possess, they still are willing to indicate to the arbitrator the way in which such evidence might affect his award. This is sufficient if the suppression of other details is necessary for the good of the country, and the parties concerned would not have it otherwise. On the other hand, the promise of information, where it can be given without restriction, is a gratifying feature, and one which was not looked for from the course events took during the earlier negotiations.

Apart from the fairness of the scheme, and the material benefit to be derived from the arrangement as to evidence, the other aspects of the scheme have in nowise diminished since we first referred to them in our issue of May 24. The saving of legal expenses and the delay involved in getting a difficult case through the courts is undoubtedly no small amelioration of the owners' lot, nor is the difficulty of procuring evidence at the time it is wanted so great when one arbitrator is concerned, instead of the numerous personnel of a legal process.

Arising out of the arbitration scheme another practice has recently been instituted, by which the owner of a missing vessel can be placed in funds as quickly as possible after his vessel has been posted. The method of providing the money is to settle a certain amount on each set of policies, war and marine, in varying proportions, as may be agreed between the several insurers. The owners having received the insurance money, the case proceeds to arbitration in the usual course and, an award having been obtained, the difference between the amounts paid, and the amounts to be settled according to the arbitrator's award, is adjusted between the two sets of underwriters, the owner having already received his money. The arrangement is one of immense advantage to the owner, and the prompt settlement which will be possible under this scheme should do much to abolish the feeling of discontent at the somewhat long period which, in the past, has sometimes elapsed between the presentation of a war loss and the settlement thereof. Already some cases have been settled in this manner; indeed, reference was made to one of them in *Shipbuilding and Shipping Record* a fortnight ago. In that particular case the war underwriters paid 70 per cent. of the claim, the balance of 30 per cent. being provided by the marine underwriters. At least one other case has been settled on the same terms, and it is probable that the greater part of the outstanding losses on missing steamers will be adjusted in this matter in the near future.

It will be seen that the two new schemes work together most excellently, and all parties concerned benefit by them, the owner being perhaps the most favoured one. The preliminary adjustment places him in the position of having recovered his loss immediately, and the two sets of underwriters then await the award of the arbitrator before adjusting the matter between themselves. On all sides, however, general satisfaction is expressed at the excellent conclusion to which the scheme has been brought, and the highest praise is due to those who have worked, with infinite pains and patience, through the seven months of gestation which have given birth to the Arbitration Scheme.

German Mails to Buenos Aires.—According to *The Times* correspondent at Buenos Aires, a London telegram published there on October 25 stated that reports were current in London to the effect that a line of submarines was being maintained between a German port and a base off the Spanish coast solely for the transmission of mail matter. Possibly some light may be thrown on the means of communication by a case which was brought to the notice of the correspondent after the arrival in Buenos Aires of the last Spanish boat. A couple of days after the arrival of this boat a letter was delivered by private messenger at the office of one X, in Buenos Aires. A charge of $2 (3s. 4d.) was made for delivery, and X being out at the moment, this was paid by the clerk who received the messenger. The envelope bore no postmark of any kind; it was franked with a German stamp, cancelled by hand, and on the back was an endorsement, made by a rubber stamp, stating that if it were desired to send a reply to Germany "through the same channels," instructions as to procedure would be given if application were made to a telephone number, which coincides with that standing against the name of the German Chamber of Commerce in the Telephone Directory.

CARGO SHIP LINES OF SIMPLE FORM.*

By NAVAL CONSTRUCTOR WILLIAM MCENTEE, U.S.N.

The recent wide discussion and general interest in the possibilities of standard cargo ships to be built in large numbers from standard plans has naturally brought into prominence the matter of simplifying the form of ships.

The tendency in ship construction for a long period has been in the direction of simplification. If, for example, the sailing vessels which formed the Spanish Armada, with their high poops and forecastles and overhanging galleries, are compared with the present-day ship, the effect of this tendency is shown very clearly. A part of the change has, no doubt, been due to the introduction of steam power and the increase in size of ships made possible by their construction of iron and steel, but even before the era of steam-propelled iron and steel ships, the tendency toward simplification was having a decided effect.

In this gradual change there has been a greater variation in the form of that part of the ship above the water-line. This is possibly due to the fact that there was more latitude in the upper works for the expression of individual ideas, or for artistic embellishment, than there was with the under-water body.

In order to make any reasonable progress through water the under-water form had to be of some reasonably good shape, and the practical limits of form variation were more restricted. An examination of the lines of one of the large boats, or small ships, used by the Norsemen nearly one thousand years ago, shows that for their purpose the shape of the under-water body was almost equal to the best we have to-day.

In general, the simplification of form requires the use of plain surfaces at right angles instead of curved surfaces, wherever possible. Where curvature is unavoidable, the simplest of curves, the circle, should be used. All curvature should be in one direction only, that is, surfaces of double curvature should be avoided as far as possible.

These considerations lead, in the forming of a ship, to the adoption of a midship section formed by two vertical lines and a horizontal line at the bottom, the corners or bilges being rounded off by circles of suitable radius. The sides and bottom of the ship will be flat surfaces carrying the full midship section well forward and aft, making what is known as the parallel middle body extend as far as possible without excessive increase in resistance. Forward, where it is necessary to fine the lines to form an entrance, it can be done by gradually decreasing the width of the ship, keeping the bottom flat and the sides vertical, the bilge being formed by a quarter circle of constant radius equal to that used for the middle part of the vessel.

Aft, the possibilities of simplification are limited by the necessity for providing space for the propellers. Two different methods of simplifying the after body are shown in Model 2056 and Model 1997, Figs. 1 and 2. The general result in these forms is to make the water

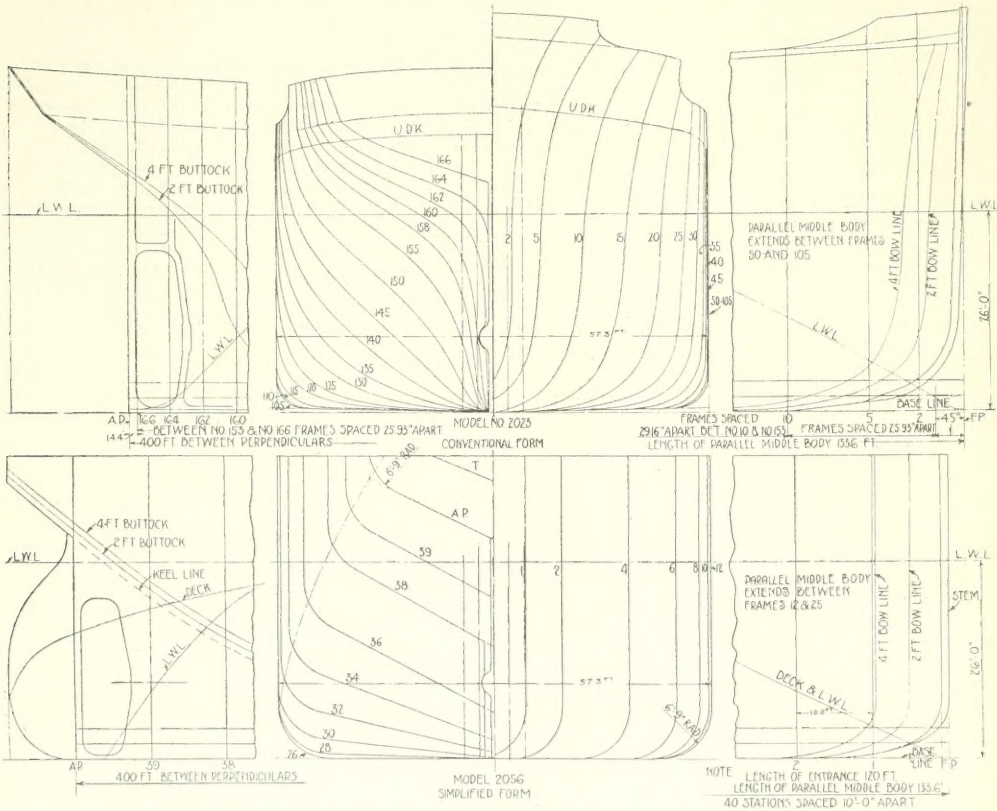

Fig. 1.—Lines for Cargo Ships, 400 ft. by 57·3 ft. by 26 ft. 13,137 tons d.w.

Model No. 2023—Conventional Form. Model No. 2056—Simplified Form.

* Paper read at the twenty-fifth general meeting of the Society of Naval Architects and Marine Engineers, held in New York, November 15-16, 1917.

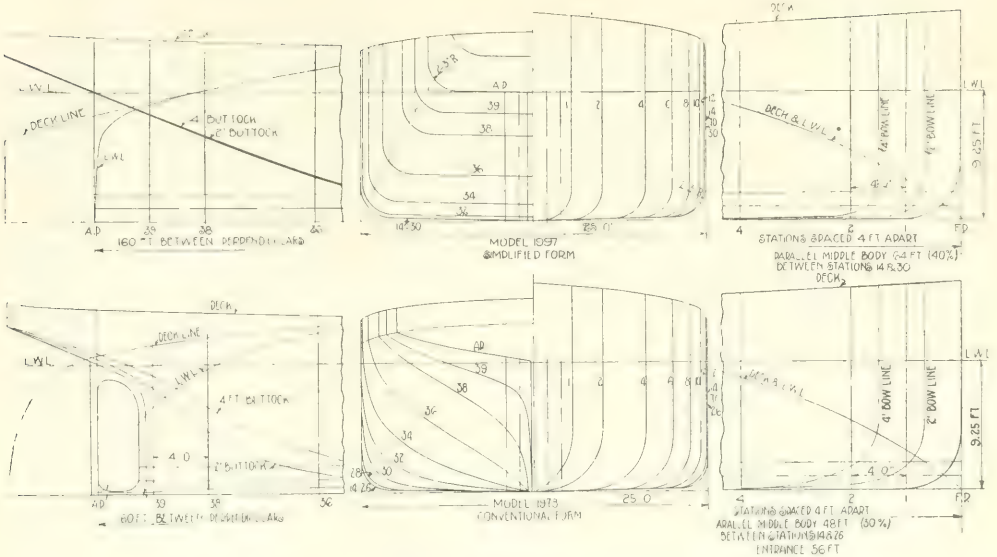

Fig. 2.—Lines for Oil Fuel Barges, 160 ft. by 25 ft. by 9·25 ft. 830 tons d.w.

Model No. 1978—Conventional Form. Model No. 1997—Simplified Form.

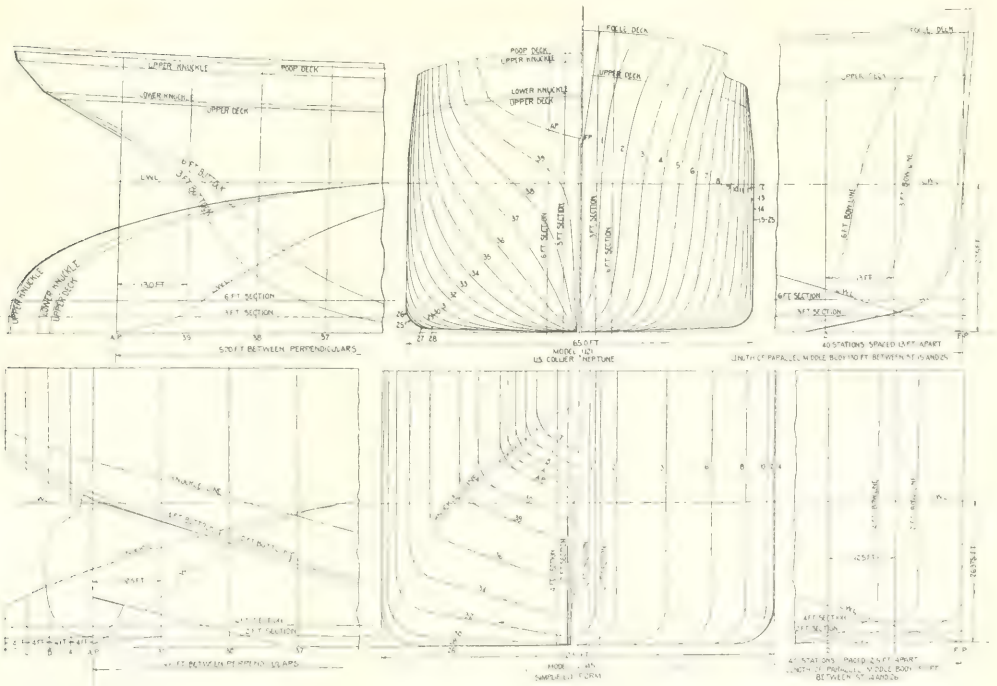

Fig. 3.—Model No. 1121. Lines of U.S. Collier "Neptune," 520 ft. by 65 ft. by 27·5 ft. 19,340 tons d.w.

Model No. 2045—Simplified Lines for Cargo Ship, 500 ft. by 72·5 ft. by 26·375 ft. [illegible] tons d.w.

line somewhat wider and place the displacement higher up. This arrangement seems favourable from both the resistance and the propulsion standpoints, but may have disadvantages as regards sea-going qualities.

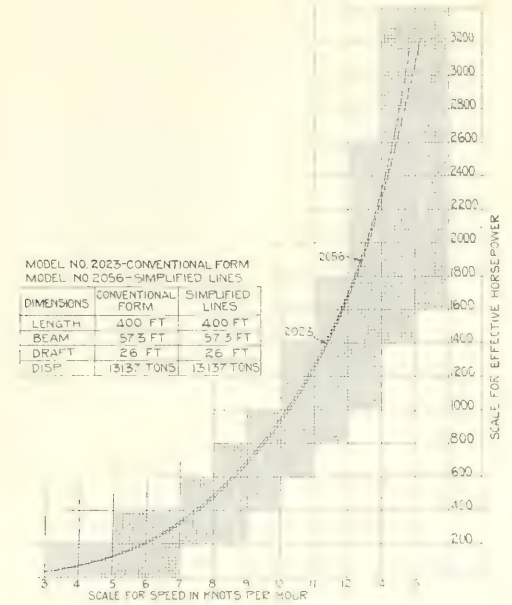
MODEL NO. 2023-CONVENTIONAL FORM
MODEL NO 2056-SIMPLIFIED LINES
DIMENSIONS | CONVENTIONAL FORM | SIMPLIFIED LINES
LENGTH | 400 FT | 400 FT
BEAM | 57.3 FT | 57.3 FT
DRAFT | 26 FT | 26 FT
DISP. | 13137 TONS | 13137 TONS
2056
2023
SCALE FOR EFFECTIVE HORSE-POWER
SCALE FOR SPEED IN KNOTS PER HOUR

Fig. 4.—Curves of Effective Horse-power for 400 ft. Cargo Ships.

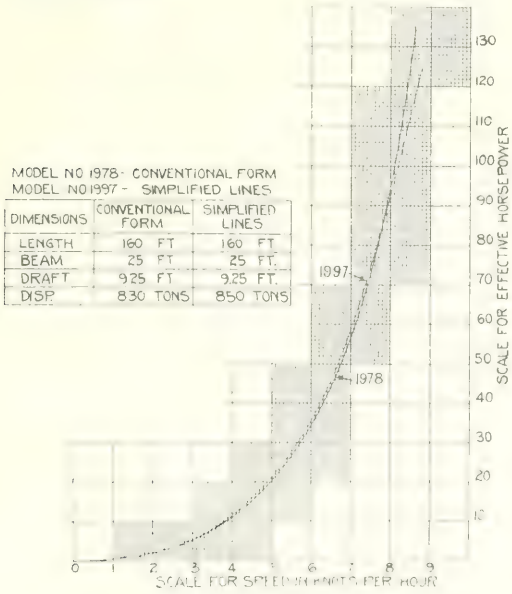
MODEL NO 1978- CONVENTIONAL FORM
MODEL NO 1997 - SIMPLIFIED LINES
DIMENSIONS | CONVENTIONAL FORM | SIMPLIFIED LINES
LENGTH | 160 FT | 160 FT
BEAM | 25 FT | 25 FT.
DRAFT | 9.25 FT | 9.25 FT.
DISP. | 830 TONS | 850 TONS
1997
1978
SCALE FOR EFFECTIVE HORSE-POWER
SCALE FOR SPEED IN KNOTS PER HOUR

Fig. 5. -Curves of Effective Horse-power for 160-ft. Oil Fuel Barges.

In the present investigation an attempt has been made to show how the power required for propulsion is affected by simplification of the lines of three different types of cargo vessels.

Models 2023 and 2056, lines of which are shown in Fig. 1, are of a 400-ft. 10·5-knot cargo ship of the usual single-screw type. At 10·5 knots it will be seen from the power curves, shown in Fig. 4, that the simplified form requires something less than 2 per cent. greater effective horse-power than for the conventional form. As Model 2023 gave results which were considered to be good for its type of vessel, it follows that the simplified form, Model 2056, would require appreciably less power than many cargo ships of conventional form in this general class now built and building.

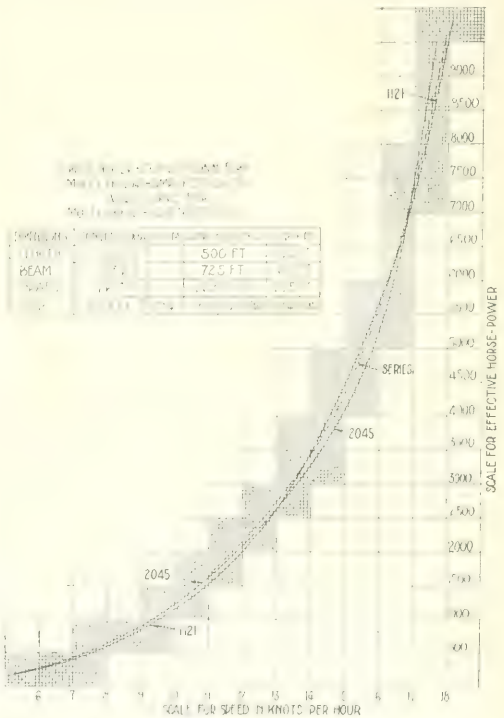

Fig. 6.—Curves of Effective Horse-power for 500-ft. Cargo Vessels.

Models 1978 and 1997, lines of which are shown on Fig. 2, are models of a 160-ft. oil fuel barge of 830 and 850 tons, respectively. Through a slight error in making Model 1997, the cylindrical or prismatic coefficient and displacement are somewhat larger than for the model with which it is compared, that is, No. 1978, of conventional form. The effective horse-power curves for the estimated power are shown in Fig. 5. It will be seen that the curves are very nearly the same, the simplified form requiring about 35 e.h.p. at 6 knots, as compared with 34 for the conventional form.

In Fig. 3 are shown the lines of the United States collier *Neptune*, and of a 500-ft. cargo vessel of simplified lines and somewhat greater displacement. The effective horse-power curves for these two models are given in Fig. 6. On this plate, also, is shown the estimated effective horse-power curve for a 500-ft. ship of conventional form having the same displacement, 20,000 tons, and the same cylindrical or prismatic coefficient, ·74. This latter curve is estimated from tests of one of a series of models of conventional form. The simplified

form requires a little more power than the latter for speeds up to 13 knots. From that, up to a speed of about 17 knots, the simplified form is the better, the advantage at a speed of 15 knots being in the neighbourhood of 7 per cent. On the same sheet it will be seen that the *Neptune*, which is of the conventional form, but 520 ft. in length, and of somewhat less displacement, that is, 19,340 tons, requires in general more power than the simplified lines.

The main dimensions of the models, or rather of the ships represented by them, are given in Table I.

In general, it appears to be safe to conclude that cargo vessels can be built of simplified lines which will give practically as good results from the resistance standpoint as those built from the present conventional lines. If propulsive efficiency is also taken into account, it is believed that the simplified form will have, at least in certain cases, advantages over the present type.

TABLE I.—DIMENSIONS.

Model No.	TYPE.	Length, feet	Beam, feet	Draught, feet	Displacement, tons	Speed, knots	L/B	Long. coef.	Midship. coef.	Cubical modulus, per cent.
1978	Oil fuel barge, conventional form	160	25	9·25	850	9	3·44	·80	·98	50
1997	Oil fuel barge, simplified lines	160	25	9·25	850	9	3·46	·82	·98	40
2026	400 ft freighter, conventional form	400	57·3	26	13,137	10·5	10·80	·788	·987	33·4
2,026	400-ft freighter, simplified lines	400	57·4	26	13,137	10·5	1120	·788	·987	33·4
* Series 1	9000 ton cargo vessel, conventional form ...	500	66	29·27	20,000	14	3440	·74	·996	49
2047	9000 ton cargo vessel, simplified lines ...	500	72·6	29·27	20,000	14	3280	·74	·989	30
1121	U.S. Collier *Neptune*	520	65	27·6	19,340	14	3460	·738	·983	25

* Estimated from Experimental Model Basin's Parallel Middle Body Series (No. 2026).

SHOP STEWARDS AND WORKS COMMITTEES.

The recognition of shop stewards and works committees as affecting the relations between employers and trade unions in the engineering industry was discussed at a joint conference of representatives of the Engineering Employers' Federation and of the engineering trade unions, held at the Midland Grand Hotel, St. Pancras, on December 8. The following official statement has been issued :—

"After discussion it was found that the question was one which offered favourable possibility of adjustment on a constitutional basis. The employers agreed to give the matter sympathetic consideration. Shop stewards, as thus proposed, would form a new link in the existing constitutional procedure and, if recognised on a constitutional basis, would form a useful means for keeping the unions in touch with workshop conditions as they vary from day to day. They would also afford additional means of bringing the management into closer touch with the workpeople employed in the factories.

"The discussion was adjourned until Wednesday, December 12, when all the trade unions who are parties, with the Engineering Employers' Federation, to the provisions for avoiding disputes, will be invited to attend. Meantime the trade unions urge on all their members that no steps should be taken which will interfere with the discussion now initiated and thus imperil the possibility of favourable adjustment. It must be recognised that it is impossible to continue negotiations in an amicable and impartial spirit if workpeople seek to force the issue by resorting to local stoppage of work.

"The unions represented at the conference were the Amalgamated Society of Engineers, the Steam Engine Makers, the United Machine Workers' Association, the Scientific Instrument Makers, the Friendly Society of Ironfounders, the Electrical Trades Union, the Amalgamated Tool Makers, the United Brass Workers and Metal Workers, and the National Society of Brassfounders."

LUBRICATION OF AIR COMPRESSORS AND DIESEL ENGINES.*

My information has been derived mainly from opportunities which I have had of examining engines in use in this country and of discussing with the owners and makers of these engines various problems which have arisen in connection with lubrication, and from conversations which I have had with several of the leading Scandinavian makers of "Diesels," in the course of several visits which I made to Denmark, Sweden and Norway in the years immediately preceding the outbreak of war. Several of the firms referred to furnished me with samples of the oils which they were using, and the samples and the remarks which accompanied them showed great differences both in regard to the oils themselves and to the opinions held by those who used them. The samples and the remarks showed a consensus of opinion on one point, *viz.*, that lubricants for "Diesels" should be pure mineral oils. The oils ranged from refined American or Russian mineral engine oils, used in full Diesels, to natural dark steam cylinder oils, used for semi-Diesels of the two-stroke type. Dr. Diesel favoured the former. The opinions seemed to be founded partly upon experience limited to mineral oils and without experience of compound oils (*i.e.*, oils containing a moderate percentage of animal or vegetable oil) partly out of regard to the late Dr. Diesel's dogmatic assertion that only pure mineral oils might be used as lubricant for his engines. His final declaration to this effect was probably made on the occasion of his last appearance in this country, in March, 1912, when he read a paper to the Institution of Mechanical Engineers. In the discussion which followed that paper, I questioned the justice of his preference for mineral oils, and he repeated and defended his empirical order.

The name "Diesel" is commonly applied to two types of engine, *viz.*, (1) the true "Diesel," fired entirely and solely by compressed air, and (2) the fictitious "Diesel," repudiated alike by Dr. Diesel and by some makers of the latter, which depend upon "bulb" ignition. The difference is important in regard to lubrication, as, while the true "Diesel" calls for the use of special air compressors, which present serious difficulties in regard to lubrication, the fictitious or so-called "Semi-Diesels" are free from the complications which these involve. One eminent maker of true Diesels said to me that the lubrication of the power cylinders presented no trouble, but that the lubrication of air compressors involved many and various difficulties from carbon deposits and sticky valves. Another equally important firm, largely interested in submarines, expressed a similar opinion, adding, in regard to air compressors, that trouble arose from water which involved partial emulsification of the lubricant and rusting of valve springs.

For many years I had been an uncompromising advocate of compound oils, *i.e.*, hydrocarbon oils with the addition of a moderate percentage of refined neutral fatty oil for internal-combustion engines of all kinds. I recognised, however, the reasonableness of the engineers' contention that the high temperature of the explosion might decompose fatty oils and produce fatty acids, and that the presence of air might induce oxidation and produce gum. But I was faced by the fact that certain oil engines, notably the original "Petter," and some others, could only be satisfactorily run upon pure vegetable oils, or upon compound oils which contained a large percentage of vegetable oil, while compound oils containing lower percentages of fatty oil were adopted and recommended by Crossleys, Tangyes, Hornsbys and the other leading makers of gas and of oil engines in this country. There was here evidently a conflict between theory and practice, and, with the assistance of our chemists, I tried to solve the problem. By and by their scientific knowledge found the solution in the fact that decomposition of fatty oils, with liberation of fatty acids, and oxidation, or gumming of these oils, are both dependent upon the presence of a liberal supply of atmospheric

* Abstract of paper by Mr. J. Veitch Watson read before the Diesel Engine Users Association on Thursday, November 1, 1917.

oxygen. Now, as Mr. Dugald Clerk has shown that an insufficiency of air means loss from imperfect combustion (with production of carbonaceous deposits), while dilution of the "mixture" by an excess of air involves loss of power in the explosion, it is evident that these extremes will be avoided in a well designed engine, in which only the volume of air necessary for complete combustion is introduced, and that the satisfactory use in certain oil engines of pure vegetable oils, or of oils containing a high percentage of these, is due to the absence of free atmospheric oxygen.

So far for the power cylinders. I recognised that different conditions occur in air compressors in which air with its quota of oxygen is present in a concentrated condition, and each cubic foot of capacity contains an amount of normal air corresponding with the degree of compression, while, as there is no combustion to utilise its oxygen, it is reasonable to suppose that the oxygen, its activity accentuated by heat, may exert a deleterious action upon any fatty materials present in the lubricant. Under these circumstances I was disposed to admit, with some regret, that fatty oils or compounds ought to be excluded from Diesel air compressors.

It is common knowledge that when the Diesel engine was originally introduced it was claimed that it would use as fuel, coal dust, coal-tar, petroleum residues—crude oils of all descriptions or any other kind of oil. Whether or not Dr. Diesel had at some time been led to place some limits on the kinds of fuel to be used in his engine, I do not know, but on the occasion of his address to the Institution of Mechanical Engineers, in March, 1912, he made a special point of the fact that the owner of one of his engines in Africa had informed him that, having failed to obtain supplies of mineral oil he had used ground-nut oil as fuel with satisfaction, with the additional advantage that the same oil served equally well as a lubricant. Dr. Diesel recognised that on account of price such oil could not be used in countries in which supplies of cheaper minerals could be obtained; but he claimed it as a special virtue of his engine (and similar statements had been made to me by British makers of oil engines before the Diesel engine was heard of) that it would use not only ground nut, but any vegetable or animal oil. But, since of every 100 units introduced to an internal-combustion engine, Diesel or other make, 95 to 97½ per cent. is for fuel, the balance being lubricant, it is surely inconsistent to argue that the 95 per cent. or thereabouts of fuel oil may be used with satisfaction while the 5 per cent. or thereabouts of lubricating oil, mainly hydrocarbon, should give rise to trouble.

It remains now only to mention some considerations to be taken account of in selecting oils for "Diesels" and other internal-combustion engines. In the first place it appears to be somewhat anomalous that, while for steam engines using superheated steam at a temperature of 600-650° Fahr. we should insist on having cylinder oil of flash point not inferior to that of the steam, we should be content to use, and should use with satisfactory success, oils of much lower flash point, say in the neighbourhood of 400 deg. Fahr., in internal-combustion engines, although the temperature of the explosion in these may be in the neighbourhood of 2,000 to 2,500 deg. Fahr.

Various explanations have been suggested, it is recognised that in the case of the steam engine, whatever the steam temperature may be, every care is taken by "lagging" and "steam-jacketing" to maintain the highest temperature in the cylinder. On the other hand, in the case of an internal combustion engine equal care is taken by water jacketing to keep the temperature of the cylinder walls as low as possible, and, if the water leaves the jacket at 180 to 200 Fahr., which Professor Robinson regards as the most effective working temperature, it is permissible to assume that the temperature of the cylinder walls will not exceed say 250° Fahr. It has also been suggested that the chilling effect of the comparatively cool walls may have the effect of producing a flameless or neutral zone immediately inside the cylinder. It would follow from this that the maximum temperature to which the lubricating oil is subjected in use is that of the cylinder itself, say not exceeding 250° Fahr., and as this is a long way below the cracking or decomposing point of any animal or vegetable or mineral oil, it is evident that a flash point of about 400° Fahr. offers sufficient assurance that no danger need be apprehended from the use of any of these oils.

As regards the relative merits of dark natural steam cylinder oils, and refined distilled red or pale engine oils, as lubricants for internal-combustion engines, it is desirable to bear in mind that all crude mineral oils contain various percentages of natural tar or bitumen, which under favourable conditions of temperature are likely to separate from the oil and to produce bituminous or carbonaceous deposits in the cylinders of either steam or oil engines in which they are used. The only justification for the use of such oils may be found in the case of crude oil engines, in the fact that when 95 per cent. or thereabouts, of crude oil is used as fuel, an extra 5 per cent. or so of crude oil as lubricant cannot appreciably affect the result. The natural bitumen or tar can only be eliminated by filtration through animal charcoal or other similar absorbent material by which the body of the oil is not greatly reduced, and then only by the removal of material which has no value as a lubricant, or by distillation by which the body of the oil is materially reduced.

When oils of heavy body free from liability to produce deposits are required, charcoal refined oils ought to be used, but in the case of engines of moderate size (and I take it that engines of large power are generally produced by increasing the number of cylinders of moderate size) the heavier distillates by themselves or enriched by the addition of charcoal refined oils and a moderate percentage of neutral fatty oil are sufficient.

NATIONAL MARITIME BOARD.

A further meeting of the Sailors' and Firemen's Panel of the National Maritime Board, under the presidency of Sir Leo Chiozza Money, M.P., was held on December 10. As a result, the following scale of rates has been agreed for men of the deck and engine-room departments:

MEN SERVING ON MONTHLY ARTICLES.

Deck Department.

		£	s.	d.
Carpenter	Per month	14	0	0
Boatswain		13	0	0
Boatswain's Mate		12	0	0
Lamp-trimmer		12	0	0
Deck Storekeeper		12	0	0
Quartermaster		12	0	0
Able Seaman		11	10	0
Ordinary Seaman				
Not less than 12 months' sea service		7	0	0
Not less than 24 months' sea service		8	10	0

Engine-room Department.

		£	s.	d.
Donkeyman	Per month	13	0	0
Storekeeper		13	0	0
Leading Fireman (when carried)		12	10	0
Greaser		12	10	0
Fireman		12	0	0
Trimmer				
Of more than 1 month's sea service		11	10	0
Of not more than 1 month's sea service				
Discretion to be exercised between a man who has already served or is serving as Trimmer		7	0	0

MEN SERVING ON WEEKLY ARTICLES FINDING THEIR OWN FOOD.

Deck Department.

		£	s.	d.
Carpenter	Per week	1	2	6
Boatswain		1	2	6
Lamp-trimmer		1	0	0
Storekeeper		1	0	0
Quartermaster		1	0	0
Able Seaman		0	17	6
Ordinary Seaman		0	17	6

Engine-room Department.

		£	s.	d.
Donkeyman	Per week	1	2	6
Greaser		1	0	0
Fireman		0	17	6

The rates named are exclusive of all bonuses and allotments, and do not apply to vessels under 200 tons gross, or to vessels sailing under the share system. These and other exceptional cases, including railway-owned vessels, will be separately considered.

In the meantime the officers and men of any department not included in the determinations now announced are reminded that they are fully protected as to the new rates about to be fixed, by virtue of the terms of clause 4 of their articles, so that they suffer nothing by signing on at their existing rates.

CONTROL OF SHIPPING BY THE GOVERNMENT.

Shipowners' Reply to Chambers of Commerce.

In our issue of October 18 we published the reply of the Chambers of Commerce of the United Kingdom to the Chamber of Shipping of the United Kingdom and the Liverpool Steam Ship Owners' Association on the maintenance of the British mercantile marine.

The Chamber of Shipping of the United Kingdom and the Liverpool Steam Ship Owners' Association have now addressed replies to the memorandum on shipping policy issued by the Association of Chambers of Commerce.

The following is the text of the reply, dated December 7, 1917, of the Chamber of Shipping :—

"It has now been possible to bring your communication of the 8th ult. before the Council of this Chamber, and I am directed to make the following reply thereto.

"Your letter refers to certain 'alleged pre-war practice on the part of British shipowners.' It is noted that your Council does not itself make such allegations ; on the contrary, the denial of their truth is contemplated in your own letter.

"The whole existence and working of conferences against whom your supposed allegations seem to be principally, if not exclusively, directed, has recently been enquired into by a Royal Commission. This Royal Commission made the most exhaustive investigations, hearing witnesses both in this country and one of the principal dominions of the Empire, and consulting the leading Chambers of Commerce and Trade Organisations. Their report was published as recently as 1909, and it will be seen that the judgment formed by a large majority of the Commission was strongly favourable to Liner Conferences and considered them to be of distinct value to the Empire.

"Before the war British steamship lines were, as your letter indicates, subject to the severest competition from foreign lines. As the report of the Joint Committee points out, the British mercantile marine and maintenance of ocean routes has depended not only upon the carriage of goods between and to and from ports of the British Empire, but the carriage of a large part of the merchandise of other countries. British shipowners before the war were so far successful in meeting foreign competition that they carried approximately one half of the commerce of the world and thus, and thus only, have they been able to provide for the needs of the country in the present war as fully as they have done.

"British shipowners have been at least as tenacious as any other section of the community in preserving their trades from foreign competition, and to maintain them, have fought severe rate wars with German and other foreign shipowners at great loss to themselves.

"But they are open to economic competition just as surely as British manufacturers and merchants.

"That British lines as well as British manufacturers and merchants have been unable wholly to exclude foreign competition from their established trade is not remarkable, but when unable to do so the conference arrangements have been equally in the interests of British commerce as of shipping.

"The alternative is of allowing the foreign competitor to run them entirely out of the trade. What you state as to foreign lines being State-aided only serves to add strength to what is stated above.

"My Council is unable to see how Government control such as you suggest can in any way ameliorate the position, having regard to the fact that British owners naturally only admit foreigners into competition with themselves when they have come to the conclusion that it is impossible to keep them out. In such a matter the judgment of a Government official is not likely to prove of assistance. On the other hand, Government interference might well result in the entire loss of the whole British interest concerned.

"Including in the conference foreign owners who cannot be excluded from the trade route has a strong tendency to bring all freight rates into line with those payable by British shippers.

"As regards your allegations (*a*) and (*c*), until allegations such as these are made and particulars given in support, my Council is not in a position to deal with them except by stating that it is not aware of any such action. I am, however, aware that British merchants, which class of trader represents, I believe, the larger part of the membership of your affiliated bodies, have, in order to meet competition in latter years, purchased foreign goods for sale at home and abroad which until then had been largely supplied by articles of British production.

"If it were the case that foreign lines were carrying from foreign ports at rates proportionately lower than shipowners were able to carry from British ports, British owners could hardly hope to maintain their trade by charging higher rates than their foreign competitors. Loss of the shipowners' trade would not assist British manufacturers, much less British merchants, but would surely involve the loss of tonnage to the British flag.

"For the above reasons my Council feel great difficulty in reconciling the supposed allegations (*a*) on the one hand and (*b*) and (*c*) which are practically identical, on the other.

"From the following paragraph of your letter, viz., 'If, however, cases can be unfortunately discovered to lend support to the allegations . . .' it is inferred that your Council has not before it any cases to prove or even support them. My Council regrets that your Council should put forward 'allegations' for which they take no responsibility, which are entirely unproved, and in respect of which your Council's highest anticipations appear to be that supporting cases *might* be discovered.

"Your letter speaks of the 'absence of the signature of several gentlemen whose names appear as members of the Committee,' and states that your council 'would like to have seen the names of other representative and important leaders in the British shipowning world included amongst the signatories to the report.' It is satisfactory to note that your Committee so far approves of the report, but that they would have wished to see it signed by an even larger number of shipowners ; but I may point out that it can hardly be said with accuracy that the signatures of 'several gentlemen' are wanting. Two members were unable to attend the earlier meetings of the Committee when the material for the report was collected and the lines of the report laid down, and the other member of the Committee, who was unable to attend any of the meetings, sent a representative whose signature appears on the report. With these exceptions, every member of the Joint Committee signed.

"The members of the Joint Committee were elected by the Council of this Chamber and the Liverpool Steam Ship Owners' Association. I think that practically every shipowner in the country is a member of one or other of these bodies. The Committee could not, therefore, but be fully representative of the whole body of British shipowners.

It seems to my Council that the after-war prosperity of the country in all sections of industry, including shipping, will depend primarily on questions of economy. So far from Government action having proved beneficial, it has loaded shipowners with increased burdens year by year and this is increasingly so. The high cost of running a British ship as compared with that of running ships under many foreign flags, *e.g.*, Greek and Scandinavian, was sufficiently serious before the war to create grave alarm, and to have already involved considerable loss of tonnage to the British flag. For some years, round about 1909, hundreds of British ships were thrown out of employment and compelled to lay up, and a larger proportion were actually kept running at a loss, owing to the high cost of working ; while foreign ships, being more free of Government action increasing costs, were able to run without loss and even at a profit.

"I am therefore to express the hope that in due course your Association, as well as this Chamber, should lend their energies to releasing commerce from Government control at the earliest possible moment

"With regard to the ultimate paragraph of your letter, while my Council desires me to remind you that the great bulk of shipowners of this country, as well as the Council of this Chamber, strongly opposed the Declaration of London, they fail to see what bearing the attitude of those who did not see entirely eye to eye with them on the matter can have upon the subject of your letter.

"I am to add that my Council recognises that it is impossible fully to deal with questions raised in your letter by means of correspondence, especially when no allegations are actually made by your Council. But I am to say that if your Council will accept full responsibility for the allegations suggested, and be prepared to support them by evidence, my Council will be happy to arrange to appoint a Committee to meet representatives from your Association to investigate them. This suggestion your Council may perhaps consider more favourable in view of the fact that this Chamber represents practically the whole of the tramp interests of this country as well as liners. My Council feel that all sections of the community should to-day make every effort to understand each other's point of view, and work closely together for the extension of the commerce of the country and the consequent well being of the nation."

The text of the reply, dated December 1, 1917, by the Liverpool Steam Ship Owners' Association is as follows :

"I am directed by the Liverpool Steam Ship Owners' Association to thank you for your letter of the 8th October and to submit the following observations thereon.

"1. The Shipowners' Report which your Council had under review is based on the recognition of the facts that—

"The only sure foundation for the future success of the British mercantile marine must be the safety and the prosperity of the nation as a whole, and the policy to be adopted must be that which is best calculated to attain that end whatever may be the disadvantages it imposes on British shipping.

. . . . . .

"In the main, shipping must follow and be dependent on the general development of international commerce, for it is the business of the shipowner to provide the means by which the producers and consumers of the world effect the oversea exchange of which international commerce is mainly composed.

. . . . . .

"The importing power of a nation must, in the main, be dependent on its power to create in its own favour international credits by the export of its manufactures and the raw materials it produces, for when once such credits are created, it can pick and choose between the imports it purchases.

. . . . . .

"In our opinion the governing factor determining the general trade policy of the United Kingdom must be our necessity to find markets for our exports of manufactures and coal. We have each year to realise abroad nearly £500,000,000 from the sales of these exports, to enable us to obtain in exchange food supplies to the value of about £300,000,000, to maintain our population, and raw material to the value of about £200,000,000 to supply our factories and workshops. Your Council maintain that—

"In times of peace, the prosperity and even the existence of British mercantile shipping as an industry depend upon the power of this country to sell its productions in the export markets of the world, and to import in return, food and raw and other materials for home consumption or for manufacturing into goods for export. British production for export, therefore, claims a paramount position; it provides British shipping with outward freight and with homeward cargoes of food and raw materials received in payment. This is apart from sea-carriage between non-British ports. Consequently, the policy governing British mercantile shipping should logically be arranged to fit the needs of British production, rather than that the policy governing British production and overseas trade should be arranged to fit the needs of British mercantile shipping.

"This Association is unable to appreciate any divergence between the views as above expressed in the report and by your Council.

"2. If it be agreed that not only the prosperity of British mercantile shipping, but of the nation itself, is dependent upon the power of this country to sell its productions in the export markets of the world, then this Association fails to understand why your Council 'must adopt a standpoint of policy different from that which is taken by those connected with mercantile shipping.'

"3. The report recognises that in determining on any general policy to secure national prosperity, the considerations of national safety is paramount, and subject to this all-important consideration the report recommends that—

"The ruling principle of our trade policy after the war should therefore consist in the maintenance for each individual citizen, be he producer or consumer, manufacturer, trader, banker, underwriter, shipowner, employer or workman of the fullest possible markets of the world.

"Does your Council accept this principle, and if not, what in its opinion is the general principle upon which the National trade policy after the war should be based?

"4. The report recognises that in the application of whatever policy be adopted, the interests, and the possible conflicting interests, of different industries, will require most careful consideration, and it was to enable such consideration to be given that in the report an endeavour was made to show in detail the circumstances in which the British shipping industry is carried on, and for the same reason it was suggested in the report that each industry should place before the nation its difficulties and its needs, so that the policy adopted may be in the interests of the nation as a whole.

"5. In any such examination it will, in the opinion of this Association, be difficult if not impossible to draw a hard and fast line between industries which your Council term 'basic industry in the true economic sense of the term' and other industries. For example, between the manufacture of cotton or silk goods which are entirely dependent on overseas supplies of raw material, and shipping, which is entirely dependent on overseas commerce. But the report does not question, and this Association has never questioned, the truth that the ships are made for the cargoes, and not the cargoes for the ships.

"6. In dealing with shipping questions, it will in the opinion of this Association be impossible to concentrate, as your Council appear to wish, attention on export freights alone. From the point of view of the manufacturer for export, the inward freights on his raw material are of equal importance, and from the consumer's point of view the shipping facilities for the carriage of our overseas food supplies are of greater importance. Therefore in the report, the part that British shipping has played in the carrying trade of the world is considered as a whole. The extent and nature of the ocean-carrying services that can be placed by British shipping at the disposal of the nation at large (and of British manufacturers which are recognised as one of the most important national interests) depends in great measure on the employment obtainable by the ships in the trade of the world, and not only on the outward and inward voyages with this country.

"In the maintenance of his position in the carrying trade of the world, the British shipowner, in the conduct of his business, is subjected to more direct and fiercer competition than perhaps any other trader; especially as in many ports his foreign competitors have behind them the direct and indirect assistance of their Governments. To meet this foreign competition is difficult, but it must be met if the ocean services that have hitherto been placed at the disposal of this country are to be maintained. How it can be met without injury to particular manufacturing industries in this country is one of the questions calling for examination; but I am to point out that the inquiry cannot be limited to merely the effect of freights on particular exports from this country.

"The prejudice, if any, to which foreign competition, or the steps taken by British shipowners to meet foreign competition, has imposed on particular manufacturers must be weighed against the advantages secured to the nation at large, including all its manufacturers from the maintenance by the shipowners of their position as the great ocean carriers of the world, and from the general services as a whole which they have thereby been able, in both war and peace, to place at the disposal of the nation.

"7. In a letter it is not possible for this Association to answer the implied charge that the shipowners have subordinated national interests to their own pecuniary advantage, which implied charge is put forward by your Council in the form of questions. But this Association is prepared to give most careful consideration, at any time, to any cases in which the interests of particular manufacturers have been prejudiced by steps taken by steamship lines to maintain their trades in the face of foreign competition, and it is prepared to support whatever general trade policy is best calculated to secure national safety and to procure national prosperity.

"8. There are two further points raised in your letter to which I am directed to refer.

"The first is your Council's views on the constitution of the Committee responsible for the report. The selection of the members of the Committee rested necessarily with the bodies by which it was appointed, and the report as presented has been adopted unanimously by the Executive Council of the Chamber of Shipping, and by this Association in general meeting.

"The second is your reference to the action taken by many of the Chambers of Commerce, by your Council, and by this Association in regard to the Declaration of London. The object of this reference is not clear, and the present would hardly appear an opportune time to review in detail the controversy, but I am to remind you that the principal ground upon which your Council and many of the Chambers of Commerce opposed the declaration was that it recognised the right of a belligerent to treat, in certain circumstances, food supplies carried in neutral ships as contraband—a right which this Association always maintained. Your Council, and many of the Chambers of Commerce, were endeavouring to amend the declaration, by altering the generally recognised principles of International Prize Law, in the belief that by making all food supplies free from capture, the food supplies of this country could be safeguarded; whilst this Association was insisting that:—

"Our safety as a nation depends on our ability, when we are at war, to keep at sea not only our fighting but also our merchant ships, and when we are at war, the provisions of the declaration would have absolutely no relation to our own merchant ships. To trust our food supply to the chance of the rights of neutral ships under International Law, either with or without the declaration, being respected by an enemy able to drive our own vessels off the sea, would be madness."

GENERAL NEWS SECTION.

PERSONAL.

Mr. Dan. Radcliffe, of the firm of Evan Thomas, Radcliffe & Co., Cardiff shipowners, has been appointed honorary Colonel of the Cardiff City Battalion of Volunteers.

Commander Sir Edward Nicholl has defrayed the cost of a beautiful reredos at St. John's Church, Cardiff, as a memorial to the late Lord Kitchener, who was an honorary freeman of that city.

Mr. Arthur Worley has been appointed General Manager in London of the North British & Mercantile Insurance Company, and Mr. Owen D. Jones is to be General Manager of the company in Edinburgh, as from January 1 next.

The chief stewards in the employ of the Lamport & Holt Line have presented an illuminated address, a reading lamp, and a silver rose bowl to Mr. R. H. Saunders, superintendent of the Victualling Department, to mark the completion of 50 years' service with the company.

Mr. Arnold Tustin, the winner of the scholarship certificate of the North-East Coast Institution of Engineers and Shipbuilders, had a successful career at Rutherford College, Newcastle, was apprenticed at Parsons' Works, Heaton, and is now training with the Durham University Officers' Training Corps.

Mr. P. W. Phillips has been appointed General Manager of the Swansea Harbour Trust, at a salary of £800 per year. He has been acting general manager since November 1, 1916, when Mr. W. Law retired. Mr. Phillips is about 50 years of age, and has been engaged under the Trust for about 16 years.

News was received in Belfast on Saturday of the death from wounds of Captain Oscar Henry Macready, Royal Irish Rifles, formerly of Workman, Clark & Co., engineering department. Captain Macready joined up in September, 1914, and had served over two years at the front with a Pioneer battalion.

Lieutenant W. Wellwood, Royal Naval Division, has been awarded the Military Cross for conspicuous gallantry in action at Passchendaele Ridge. Lieutenant Wellwood is a son of Mr. J. E. Wellwood, J.P., managing director of the Irish Shipowners' Co., Ltd., and before the war was an officer in the mercantile marine.

Mr. Percy Graham Buchanan Westmacott, who died on September 10, at the age of 87 years, has left estate valued at £144,193, with net personalty £120,676. He was a well-known engineer and inventor, and for a number of years was a Director of the firm of Sir W. G. Armstrong, Whitworth & Co., Ltd.

Mr. George R. Martyn, shipowner and merchant, died at Newport, Mon., last week, at the age of 60. He was born at Padstow and his interest in the district was retained until his death. Mr. Martyn had been chairman of the Newport Chamber of Commerce, Newport Shipowners' Association, and Newport Conservative Association, and was the founder and head of the firm of Martyn, Martyn & Co., iron ore importers, coal exporters, shipbrokers and shipowners.

Mr. J. C. Gould, a Cardiff shipowner, has decided to give a grant of £1,500, in three annual payments, to a fund which has been inaugurated for the purpose of supplying discharged sailors and soldiers with the best type of artificial limbs obtainable. The fund is intended to supplement the provisions made by the Government. Mr. Gould, in his letter to the Cardiff Association offering the gift, states that it was his intention that the donation should be regarded as a private donation, "as a token of my admiration and esteem not only for the soldiers and sailors themselves, but for the good work the members of your Association are doing."

The death occurred on December 5 of Mr. Frank Everard Dixon, in his forty-fourth year. Mr. Dixon was a Director of Harris & Dixon, Ltd., steamship owners and brokers, of 81, Gracechurch Street, London, E.C. He was a well-known member of the Baltic Mercantile and Shipping Exchange, and also an underwriting member of Lloyd's since 1896.

Mr. Thomas Dixon, of The Longlands, Grove Hill, Middlesbrough, died at his residence on December 7. For many years he was Secretary and a Director of the Middlesbrough shipbuilding firm of Sir Raylton Dixon & Co. He was widely known and held in high esteem in northern circles and was a prominent figure in Tees-side shipbuilding for many years.

Capt. G. C. Coates (Alderman) was re-elected chairman of the Tyne Port Sanitary Authority in Newcastle on Friday last. During the proceedings he mentioned that the senior naval officer of the Tyne District had written expressing his appreciation of the patriotic manner in which the Port Sanitary Authority had placed its resources at the disposal of the naval services.

Colonel C. S. Denniss, J.P., who was for a long period the General Manager of the Cardiff Railway Company, died at Birmingham on December 8, at the age of 57 years. In 1910 he was appointed to the management of the Bute Docks, but resigned that position a short time ago. During his period of control over the Bute Docks he contributed largely towards the increased efficiency of their working.

Sir Walter Richard Plummer, of the firm of Plummer & Co., merchants, Newcastle, died on December 10, at the age of 59 years. Sir Walter, who was created a Knight in 1904, was an Alderman of the City, and a Director of the Wallsend Slipway and Engineering Company, the North-Eastern Railway Company, and the Northern Counties Newspaper Company. He was Conservative member for Newcastle from 1900 to 1906.

Mr. Thomas Spencer, who has been co-opted as a member of the South Shields Town Council, is a retired marine engineer, and was for over 20 years Manager of the Marine Engine Works of the late Mr. G. T. Grey, West Holborn, South Shields. He was a member of the South Shields Local Marine Board for 20 years and, when that authority became defunct, was appointed by the Board of Trade on the North Shields Board, on which he still serves. He is a representative of the marine engineers on the Maritime Wages Board, recently appointed by the Government.

Mr. Edwin L. Orde, who has been widely complimented for his excellent presidential address to the North-East Coast Institution of Engineers and Shipbuilders, belongs to one of the oldest families in Northumberland, the Ordes of Nunnykirk. He has been a member of the Institution since 1887, and was elected a member of the Council four years ago. Last year he was co-author of a tripartite paper on Works Management, a very notable contribution to the proceedings of the society. Mr. Orde is works manager at the Walker shipyard of Sir W. G. Armstrong, Whitworth & Co., Ltd.

The recent retirement of Mr. John Cooper from the position of Master of the Liverpool Landing Stage has caused a number of his shipping friends to present him with an illuminated address and attaché case, as a mark of their appreciation of his courtesy and kindness during the 40 years he has been connected with the Mersey Landing Stages. The address states that as Master of the Prince's Landing Stage Mr. Cooper had won the approbation of shipowners and superintendents, and by strict impartiality and courtesy he had maintained the best traditions of that office.

Captain Allan Grant Douglas, M.C., eldest son of Mr. William James Douglas, of Douglas & Adair, consulting engineers and marine surveyors, 1, Fenchurch Avenue, London, E.C., has been killed in action. Early in the war, Captain Douglas joined the London Regiment, of which he subsequently became Adjutant. He received the Military Cross in July last, the *London Gazette* stating: "He performed the duties as adjutant with great energy and efficiency."

Mr. Adam Wood, of Troon, near Ayr, coalmaster, a director of the Ailsa Shipbuilding Company, and head of the Gauchalland Coal Company, who died on September 11, left personal estate in the United Kingdom of £301,054, including his holding of £126,470 in the Ailsa Shipbuilding Company and £69,552 in the War Loan. He bequeathed £10,000 to the Kirk Session of Troon Parish Church; £1,000 each to the Troon Nursing Association, the Galston Nursing Association, and the Dalrymple and Patna Nursing Association, and the Kirk Session of the Parish Church of Troon to be distributed among the poor of the parish, and £300 to apply the income towards the cost of keeping Crosley Church, near Troon, in order.

FROM OUR CORRESPONDENTS.

CLYDE DISTRICT.

(FROM OUR OWN CORRESPONDENT.)

Coasting Rates Advanced.—A number of shipping companies engaged in the home coasting trade have found it necessary to advance their rates still further owing to the increase in all expenses incurred under the existing exceptional conditions. The Carron Company, the Clyde Shipping Company, Ltd., the General Steam Navigation Company, Ltd., and the London and Edinburgh Shipping Company, Ltd., have given notice to shippers that the surcharge will be increased to 50 per cent. on the gross rates on all goods received for shipment on and after Monday, December 10, and until further notice.

Proposed Oil Wharves.—It was reported at a meeting of the Clyde Trustees held last week that negotiations have been opened between the trustees and two oil companies with regard to the establishment of private wharves on the Clyde for the use of oil tank steamers. The companies desire to know the terms and conditions on which such wharves would be permitted on special sites which are indicated. The Law and Parliamentary Bills Committee of the Trust, which has had the applications under consideration, report that while they are generally favourable to the proposal, they are not in a position to make any recommendation until the schemes, in so far as they may affect the navigation of the river, are submitted in detail.

Steamers for Fish Transport.—The fishery ports in Scotland will welcome the new arrangements which have been made by the Government authorities for the rapid transport of fish, particularly herrings, caught round the Scottish coasts, so that they may be made more readily available for food throughout the country. A fleet of six fast steamers will be specially provided to carry the catches from any port, which for the time being may be the headquarters of the fishing fleet, to the nearest railway centre. The steamers are of a new and improved type, and are designed for a comparatively high speed. One of the vessels is expected to be ready for service in the course of a few days and the others will probably be at work early next year. This arrangement has been made owing to the fact that during last season great difficulty was experienced in getting herring carried to large centres of population in good condition.

Clyde Lighthouses Revenue.—Mr. W. H. Raeburn, who was re-elected chairman of the Clyde Lighthouse Trust at a meeting held last week, gave an interesting account of the present condition of the finances of the Trust. The revenue for the year, he said, had gone down as was expected, owing to fewer movements of ships. The dues collected amounted to £14,886, compared with £20,791 in the preceding year. From January 1 of this year, however, a discount of 25 per cent. from the maximum rates which were then being levied had been given, and that discount amounted to £2,916, so that the falling off in traffic was equal to about 16 per cent. The expenses of administration amounted to about £12,628, against £11,720 in the preceding year. There was a surplus revenue of £4,771, of which £1,018 had been carried to sinking fund under statutory terms. The balance of £3,753 was carried to revenue reserve. The liquid assets of the Trust, amounting to £50,750 were invested in War Loan, Exchequer Bonds, and Clyde Navigation stock. Against that they had a mortgage of £18,750, which would all be paid off a year hence. With a liquid surplus of £32,000, a good dredger and other property, he thought it could be said that the Trust was in a healthy financial condition.

SCOTTISH EAST COAST DISTRICT.

(FROM OUR OWN CORRESPONDENT.)

Stonehaven Harbour Board.—Provost Greig has been unanimously re-elected chairman of Stonehaven Harbour Board. The trade of the port is stated to be in a fairly satisfactory condition, the revenue of the Board for November being almost double of that for the corresponding month of last year.

Tay Ferry Rates.—Dundee Harbour Board had under consideration last week the question of raising the passenger fares on the Tay ferries. It was unanimously agreed to increase the fares with the exception of season tickets. Although the Trustees were also desirous of advancing the rates to season ticket holders, they have been unable to do so as the railway companies, which compete for traffic with the ferries, decline to increase the cost of their season tickets more than 2½ per cent. The Trustees, however, did not consider it worth while to make so small an advance, and consequently they have made no change in their charges to season ticket-holders.

Harbour Improvement at Montrose.—The Montrose Harbour Trustees have decided, owing to the dangerous condition of the lower jetty, to remove half of the jetty nearest the river, and to strengthen the remaining half in order to put it in a condition of safety for shipping. The timber removed from the part to be taken down will be used in repairing the remaining part of the jetty. It was reported that the amount of harbour dues collected during November showed a considerable falling off compared with the amount collected in the corresponding month last year. The revenue of the port for the past six months amounted to £1,154, being £848 less than in the corresponding period of 1916.

Aberdeen Arbitration Claims.—Decisions have been issued in connection with claims for advances of wages by various classes of workers in the shipbuilding, engineering and associated trades in the Aberdeen district. Some time ago the boilermakers lodged an application with the Aberdeen Shipbuilders' Association for an increase of 25 per cent. on the riveters' price-list for work on trawlers and fishing vessels as from July 30, 1917. The finding of the Committee on Production to whom the claim was submitted, was that the claim was not established, but the Committee were of opinion that shell (including flat keel) riveting should receive further consideration. The sheet metal workers claimed a war bonus of 10s. per week, and they were granted an advance of wages of 1d. per hour. Apprentice engineers applied for an advance of 3s. per week for apprentices over 18 years of age, and an arbiter found the claim established.

NORTH-EAST COAST DISTRICT.

(FROM OUR OWN CORRESPONDENT.)

Further War Bonus to Trimmers.—As the result of a conference between the North of England Steamship Owners' Association, the North of England Trimmers and Teemers' Association and the National Union of Railwaymen a further war bonus of 17½ per cent. has been conceded to the trimmers between Amble and the Hartlepools, making the earnings 60 per cent. above the ordinary tariff observed on the North-East Coast. The advance came into full operation on December 3.

Treatment of Shipowners.—A resolution from the Cardiff Chamber of Commerce protesting against the unfair and one-sided treatment of British shipowners by the Government," and pointing out that "owing to the enormous profits earned by neutral shipowners, which are being applied to the reorganisation and increase of their own mercantile marine, British shipowners are now faced with the difficult problem of meeting the competition of other nations for the world's carrying trade after the war," was discussed at the last meeting of the Hartlepools Chamber of Commerce, and a resolution to support it was carried.

Shipbuilding Development at Willington.—A syndicate has bought out the shareholders of J. T. Eltringham & Co., Ltd., at Willington-on-Tyne, and under the new *régime* we may see appreciable developments, as every effort is to be made to get the most out of a well-equipped yard. Mr. Rowland Hodge will be the new chairman, it is expected, of Messrs. Eltringham, and the managing director will be Mr. D. W. Fitzgerald, who has been associated with the firm for many years. Messrs. Eltringham had successful engine and boiler works at the Stone Quarry, South Shields, and also a small shipyard for a long period, but some years ago they migrated to the north bank of the river and settled on a fine site which in the 'nineties was occupied as a shipyard by Palmers' Company, the ground being opposite the Jarrow works of the latter firm.

Shipyard Extension.—Irvine's Shipbuilding Company, at Hartlepool, has inquired of the Hartlepool Commissioners if they would be disposed to grant to the company a lease of land now held under yearly agreement, the ground to be held concurrently with a lease of the shipbuilding yard from the North-Eastern Railway Company, which has about 60 years to run. At a meeting of the Commissioners, when the matter was referred to, it was pointed out that harbour developments would not be interfered with by the granting of the lease mentioned, but the Board was reminded that if a scheme of improvement suggested by the engineer some years ago was carried out, Irvine's shipyard might be turned round so that ships of the largest type could be constructed and launched into the sea instead of into the harbour, as is done now. No action was taken pending a formal application by the company.

Advance in Wages.—The amendment of the Order of October 13, whereby the Committee on Production extended the 12½ per cent. advance in wages to all the time workers in the engineering and shipbuilding trades was awaited with interest on the North-East Coast by the workers concerned. Originally the increase named was granted to skilled men in the engineering works who had been training unskilled workers, because these latter men were ultimately able, on piece rates, to earn higher wages than the skilled men who were paid district time rates. Various craftsmen claimed to come under the award, other than those whom the Ministry of Munitions had in mind, and on representations being made by the trade unions the 12½ per cent. was conceded to all skilled, semi-skilled and unskilled plain time workers in the shipbuilding and engineering industries, and thus a lot of dissatisfaction, not to say critical friction, was removed.

Tees Conservancy Accounts.—Sir Hugh Bell, Bart., presided at the last meeting of the Tees Conservancy Commissioners, when the accounts for the year were reviewed, and showed, as in the case of nearly all industrial rivers, a deficit on the 12 months. The gross receipts have declined since the outbreak of war, but the financial position of the authority, nevertheless, remains sound. In the year ended October 31, the receipts amounted to £84,641, the income from iron dues having decreased by £18,552. Regarding the abolition of rebates on river dues, Sir Hugh said, apart altogether from questions of the Commissioners' finance, he thought they were bound by their relations with neighbouring ports not to differentiate too much from their conditions. Some change was necessary, and he thought they had made it in the way least likely to affect their credit or their customers. The capital debt of the Commission, Sir Hugh mentioned, now stood at £614,000.

MERSEY DISTRICT.

(FROM OUR OWN CORRESPONDENT.)

Increase in Port Charges.—In consequence of a further war allowance in pay of 1½d. per hour to casual dockers at the Manchester Docks (making the increase now 5d. per hour), and of 6s. per week to the regular dockers (a bonus increase from 15s. to 21s. per week), the Manchester Ship Canal Company will from Saturday next increase the port charges by 12½ per cent. This rate of increase will apply to the canal tolls and wharfage rates, ships dues, the use of ship canal tugs, the rates for loading and discharging vessels, for quay porterage, warehousing, and storing merchandise and minerals in the open. A like increase will be made in through rates of railway and canal traffic from December 24.

The ship canal workers have, however, since this offer was made, decided to refuse it, and insist on the recognition of the District Committee of the Union in conducting future negotiations, and they also reaffirm their original demand for the existing war bonus to be converted into wages, and for any further increase to be an addition to wages. The position will be further considered next week, and meanwhile the men are remaining at their work.

The fact has been disclosed that in view of the difficulties of shipping, the Government propose to offer to buy the 1917-18 Uganda cotton crop through the agency of the different firms there, and the Government have also offered to buy the West Indian Sea Island crop at the port of shipment at a fixed price.

Hide and Skin Trade.—An organised effort is being made here to regain for the port of Liverpool the imported hide and skin trade which in late years has been secured by Antwerp and Hamburg. This is the outcome of an address given to members of British firms engaged in this trade at Liverpool on Friday by Mr. W. Howarth, of the Brazilian Consular Service, and it is important to add that the suggestion of making Liverpool the central European hide market is supported by the trade in all parts of the country, and notably Bristol. A communication from P. and S. Evans and Company, of the latter town states "In past years Liverpool was the hide centre of the world, and there is no reason why it should not be so again to the advantage of all those in this country who are interested in hides and skins."

By means of elaborate statistics, Mr. Howarth showed how Germany had obtained an undoubted ascendency over Liverpool and England in the hide markets of the world, and the present, he said, was the psychological moment for the initiation of a strong "counter attack," to recapture and consolidate the position which by political right should belong to this country, and by geographical right to Liverpool, with its unequalled import and export advantages. Offering suggestions for dealing with the position, Mr. Howarth suggested that one measure of advantage would be the inauguration of a special section of the Liverpool Chamber of Commerce, which would carry through any plan of operations agreed upon, dissemination of information as to new sources of production as well as of the methods of business in some of the overseas markets, central storerooms, periodical sales of stocks, and the attraction of buyers to such sales. It is probable that some definite course of action will be decided upon at a further meeting which has been called for next Monday to further deliberate upon the subject.

SOUTH WALES DISTRICT.

(FROM OUR OWN CORRESPONDENT.)

Riggers and Boatmen's Wages.—Mr. John Cory presided over a special meeting of the Executive Council of the Cardiff Shipowners' Association. The meeting was called for the purpose of considering a communication which had been received from the Amalgamated Labourers' Union, with reference to an application of the licensed boatmen and riggers at Cardiff and Penarth, for a further advance of 37½ per cent. in their wages. These employees have already been granted a bonus of 37½ per cent., so that their present application is for an increase of 75 per cent. on their pre-war rate of wages. It was decided to refer the matter to the Committee on Production.

Pitwood Allocation Committee.—A meeting of the Cardiff and Bristol Channel Pitwood Importers' Association was held at Cardiff. The meeting was called to consider a letter from the Controller of Timber Supplies with reference to the proposed South Wales Allocation Committee. Mr. W. Harry was elected as the representative of the Pitwood Importers' Association on the Allocation Committee. It is understood that Mr. Thomas Evans, of the Ocean Coal Company, will represent the Admiralty Pitwood Committee. The Allocation Committee is being formed for the purpose of securing a more equitable distribution of the supplies of pitwood to the collieries, in accordance with the requirements of the collieries, and thus obviate the possibility of some collieries being fully supplied while others were starved of supplies.

After-War Control of Imports and Exports.—The Cardiff Chamber of Commerce have had under discussion the Government's Bill for the control of trade for three years after the war. The President explained that they did not object to the principle of the Bill, but they were dismayed at the prospect of the control of trade and commerce being continued for three years after the war. He proposed the following resolution :—"That the Chamber views with apprehension the Bill to put the import and export trade on which the country depends for the means of supporting its population, under the control of the Lords of the Council after the termination of the war, and suggests that the control should be

for a period of six months, renewable from time to time for a further period of six months only when it is proved to the satisfaction of Parliament that such renewal is necessary for the well-being of the country." The resolution was carried.

Pooling Scheme Adopted.—The pooling scheme for the supply of coal to Italy was adopted at a meeting of coal exporters, held at the Cardiff Exchange, on Friday. The scheme will come into operation from January 1 next, and a fittage charge of 1½d. per ton will be allowed to the firms actually doing the export. The business will be entrusted to six firms who were the largest exporters of coal before the war. Two members will retire every three months, are and to be replaced by two others representing the next largest exporting firms. The distribution of the moneys pooled will take place quarterly pro rata, to the percentage of the business done, and the former business of the respective firms. It was decided to approach the Italian Coal Commission, through the Board of Trade or otherwise, with the object of securing the exporters' commission and brokerage for the pool on business done with Italy in excess of the arranged Government orders between October 31, 1916, and December 31, 1917. A deputation of Swansea exporters attended with the object of securing co-ordination in working between the exporting districts.

Application to Increase Dock Dues.—It was stated at a meeting of the Swansea Harbour Trust, on Thursday, that the Trustees had agreed to act jointly with the other dock and railway companies and port authorities of the Bristol Channel, in an application to the Board of Trade for an Order, under the Defence of the Realm regulations, to increase the rates on tonnage and goods. It was stated that this increase in the case of Swansea would, if granted, be additional to the 50 per cent. increase already made on the Schedule rates on tonnage and goods. There is power under the Defence of the Realm Act, where dock authorities can show that owing to war conditions, increased prices, and enhanced wages, the rates are not enough to make both ends meet, the Board of Trade may order such an increase of rates beyond the statutory maximum limits, as it may consider necessary in each particular case. At all the Welsh ports rates are already, in practically all cases, up to their maximum limit. The demand for higher dock dues is general throughout the country, and at Liverpool and on the Tyne substantial increases have already been made within their respective statutory rights. The case is different at those ports where, as in the case of Cardiff, Barry, Newport and Swansea, the rates levied on shipping and on goods are already at the maxima. The statement that all the local dock authorities are acting jointly in the present application is confirmed, and if the rates are increased by 50 per cent. the revenue of each will be appreciably improved, although not by an equal percentage.

Shipbuilding Facilities of the Bristol Channel.—Various ports in the Bristol Channel have been visited by representatives of the Admiralty. The deputation consisted of the following:—Mr. W. A. T. Shorto, Director for Administrative Duties; Mr. H. M. Grayson, Director of Ship Repairs; Commander F. S. Rising, R.N.; Naval Assistant; Major J. W. Hamilton, R.E., Director of National Shipyards; Major G. E. Cockburn, R.E., for the Director of Engineering Work; Captain H. S. Westcott, R.E., Assistant; and Lieutenant Briggs, Secretary. At Swansea the conference included representatives of the Corporation, Harbour Trust, and Chamber of Commerce. The facilities offered by the town and port for repairing and constructional work were discussed. The conference received a full report upon the docks and shipping, and afterwards the deputation visited the docks, dry docks, harbour, and certain works. At Port Talbot they carried out an inspection of the harbour and docks, and the available sites in the neighbourhood, suitable for the requirements of the Government, were visited. At Cardiff the Lord Mayor placed the deputation in touch with the representatives of the various industries in the district, and the technical officers of the deputation subsequently visited the dry dock and repair establishments and other works of importance to the Government at the present time. The deputation visited Newport on Thursday, and inspected the Alexandra Docks and the proposed site for a shipbuilding yard on the banks of the river Usk. Having concluded their round of inspection the deputation will make their report to the Admiralty in due course.

Shipyard Fire at Toronto.—A Reuter message from Toronto states that a fire which broke out at Polson's shipbuilding yards [illegible] to the extent of £10,000 but work will [illegible] resumed

BELFAST DISTRICT.

(From Our Own Correspondent.)

Ferro-Concrete Shipbuilding.—J. & R. Thompson, Ltd., a leading firm of builders and contractors in Belfast, have taken a lease of ground on the shores of Carlingford Lough for the construction of ferro-concrete ships. They are the second city firm to go in for this class of work as J. & W. Stewart are at present constructing a ferro-concrete vessel in the London area. The site of Messrs. Thompson's yard is close to the town of Warrenpoint, and is on ground which was formerly used for the construction of wooden sailing ships. Messrs. Thompson have hitherto confined themselves to the ordinary work of contractors, and their entry into the shipbuilding industry is being followed with interest.

THE FREIGHT MARKETS.

(From Our Own Correspondents.)

London.—There is practically no change to record in regard to chartering business on the Baltic Exchange. Tonnage is still in very restricted supply, and rates of freight are consequently maintained at the high figures which have been current for months past. From the River Plate homeward Government rates are still 145s. from the up river ports, or 5s. less for down river loading, but neutral tonnage can obtain 200s. to the United Kingdom and probably 220s. to France. From the ports on the North American Atlantic seaboard there is a brisk demand for vessels on net form of charter, the rates being 230s. to the United Kingdom, 260s. to French Bay ports, and 360s. to Italy. For Gulf loading an additional 30s. on these figures is obtainable. For heavy grain the rate is still 40s. to this country, or 45s. to France, and 70s. to Italy. Coal cargoes offer from Virginia to the Plate at 117s. 6d., which figure owners are not eager to accept, while from the Plate to the United States linseed cargoes are worth $20 to sailing vessels. In the Eastern section of the market there is no falling off in the demand for tonnage. Karachi continues to offer 250s. on scale basis to this country, and Bombay, on deadweight, would concede 275s. to the United Kingdom or 400s. to the Mediterranean, while the Madras Coast is open to take up tonnage at 550s. to Marseilles for kernels. From the rice ports the demand is very strong, and both Burmah and Saigon would pay 600s. to France or the United Kingdom. The Mediterranean ore and phosphate ports are doing business on a basis of 45s. Huelva to the Mersey; 60s. Aguilas to Dunkirk; 80 frs. Sfax to Rouen, 50s. Bougie to the Clyde; and 70s. Sfax to the Bristol Channel, while pyrites can be done at 60s. Huelva to the Bristol Channel. In the Bay trade fixtures are recorded at 22s. 6d. Bordeaux to Bristol Channel, and 24s. Bayonne to the same destination.

Glasgow.—The position of affairs on the Glasgow market has remained without material change throughout the week. The tone has continued firm owing to the scarcity of boats, which is still responsible for the restriction of business. Homeward markets attracted little tonnage and rates were firm. Among the fixtures reported in the various trades were the following: New York, two steamers (neutral), Lisbon 400s., net form, December-January; New York to Sydney, New South Wales, 118s.; Buenos Ayres to New York, about 83s. 6d., linseed; Calcutta, 9,000, Suez and Port Said, 425s., per 60 c.f., January; San Francisco, 8,300, Australia (three ports) and back to San Francisco, lump sum, £100,000; time charter, States and West Coast South America, 3,500, 40s., one round trip, delivery New York, re- delivery North of Hatteras, December; time charter, States and West Indies, about 3,000, 35s. one round trip, delivery and re-delivery north of Hatteras.

Newcastle-on-Tyne.—There has been no minimisation in the rigour of the tonnage scarcity during the past week, and, as a result, business has been exceedingly dull. The falling-off in the official demand for fuel, and the consequent diminution in the quantity of requisitioned tonnage sent to this district to load has had a serious effect upon the employment of collieries in Northumberland and Durham, and much lost time is reported. The only fixtures reported this week are as follow:—Dieppe, 500, 72s. 3d., coke, neutral; Gothenburg, 2,000, 190 kr.; and Stockholm, 2,900, 200 kr. The Swedish rates, it will be noted, show no change on the week. At the time of writing, quotations for this direction are stated to be slightly easier, but no business has been done whereby this fact may be tested. For the Spanish Atlantic, considerably more money is collected, Bilbao being now listed at 180s. Portuguese

ports, also, are at a premium, 100s. being offered for Lisbon, and 110s. for Oporto. Gibraltar is firm at 100s., and Port Said at 200s. The Spanish Mediterranean is firm at 300s. for Barcelona. There are, of course, a good many steamers plying between this country and French and Italian ports with fuel supplies, but as these do not come into the open market, but are arranged for by the authorities, no account of their number or volume can be given. Suffice it to say that the trade thus assured is not sufficient to do all that is needful for the maintenance of the mining industry hereabouts.

Liverpool.—The demand for outward tonnage is as keen as ever, but business done is very limited, and confined almost entirely to the requirements of Allied countries. Rates keep very firm, and neutrals are not even attracted by the higher values for uncontrolled tonnage offering. Time chartering is likewise quiet, though 40s. has been paid for a round trip New York to Brazil, and 49s. for a 2,000 ton d.w. ship, six months in the general trades. In the homeward trades, North America has a firm tone especially for grain, the rates for which have been advanced to 50s., Range to United Kingdom, 56s. 3d. to French Atlantic, and 75s. to Italy. Net charters values are unchanged, though 300s. is reported offered Range to Marseilles. Eastern markets remain quiet with the tonnage difficulty still acute, though Saigon has fixed a handy neutral to Marseilles at 500s. December-January. Business from the Indies is confined to liners, and firm rates are paying for parcels to United Kingdom and West Italy. Mediterranean ore ports are doing a fair business at firm rates. Sfax getting 75s. to East Coast United Kingdom, and Tunis 65s. to the Clyde. River Plate homewards dull, and neglected.

Cardiff and Swansea.—Business on the outward coal freight market continues on restricted lines. Orders continue plentiful, but transactions have been limited owing to the continued shortage of tonnage. Maximum rates are easily upheld for all directions. A steamer was fixed for Gibraltar at 100s., and Dakar was done at 85s. The following transactions were reported for France:—Caen 48s. (neutral); St. Malo 22s. (allied); Rouen twice at 48s. 9d. (neutral); Havre 22s. 6d. (allied); La Pallice 61s. 6d. (neutral); Nantes (Newport loading) 61s. 6d. (neutral). On the Swansea market actual chartering has been slow, although an active demand continues for tonnage. Quotations remain firm for all ports. Transactions disclosed were:—Havre 43s. 6d., Rouen twice at 48s. 9d., Rochefort 61s. 6d., all neutral steamers, and Burry Port to Guernsey at 42s.

THE COAL MARKETS.

(From Our Own Correspondent.)

After a spell of brisker trade the coal markets at the principal coal exporting ports have once again sunk into a somewhat lethargic condition. The cause is practically wholly due to transport difficulties, both sea and land. So far as our transport is concerned the rough weather recently experienced has contributed not a little to the troubles of coal owners and merchants, and the same cause has been responsible to some extent for the delays on the railways, by preventing rolling stock from being moved as freely as it might otherwise have been.

Notwithstanding these troubles, however, the coal markets of the North East Coast and South Wales preserve a steady tone, even though the amount of new business entered into has been small. Running contracts have to be kept going and the collieries have managed to scrape along without losing too much time, though conditions vary and there is unevenness, some collieries being much better placed than others. The export trade is, of course, very much restricted, but the authorities continue to take considerable quantities of steam coal and the inland demand is very strong.

The bunker coal market is, however, weak, both on the North East Coast and in South Wales, in consequence of the restricted movement of shipping, and bunker fuel of any description is easily obtainable at schedule prices. On the North East Coast, Durham bunkers are over plentiful and the minimum prices obtain of 24s. to 27s. 6d. Special bunkers for export are, on the other hand, scarce, and there is no surplus, so that the price of 30s. is maintained without difficulty.

In South Wales stocks of bunker fuel are much too large and the collieries would welcome their reduction, but there appears little likelihood of this happening at present. Consequently the official minimum price of 18s. to 22s. 6d., plus the war wage increase of 2s. 6d. a ton, is readily accepted by sellers, who would be glad to dispose of considerable parcels at this figure.

On the North East Coast contracts have been placed by the Norwegian State Railway with a number of merchants for a quantity of Northumberland and Durham steam coal in parcels of about 9,000 tons. Shipment is to be made in January or February next, and the price is 5 per cent. above schedule figures. Plenty of steam coal can be had at the minimum fixed prices, and smalls are more or less a drug on the market. For Durham gas coals, too, the demand is limited. Other sorts, such as peas and nuts, coking coals and house coal are in a better position, as they mostly go inland where the demand is fully sustained.

Approximate quotations are for best Blyth steams 30s. to 32s. 6d., and smalls 18s. 6d. to 20s. 6d.; Tyne primes 29s. 6d. to 32s., and smalls 25s. to 27s. 6d.; second steams 25s. 6d. to 29s. 6d., and smalls 18s. 6d. to 20s. 6d.; unscreened steams 24s. to 25s.; North Northumberland steams 28s. and smalls 20s.; smithies 25s. to 30s.; nuts 32s. 6d.; Durham gas coals 23s. 6d. to 30s.; coking coals 17s. to 25s.; house coal 20s. to 22s. 6d.; bunkers 24s. to 27s. 6d., and specials 30s.; foundry coke 42s. 6d. to 45s.; blast furnace coke 35s. 6d.

The South Wales coal trade has been in a very dull condition and shows no indication of possible improvement. Only a very small amount of new business has been put through, and enquiries are almost non-existent. All classes of coal are abundant, even best quality steams being procurable without difficulty, notwithstanding that the authorities absorb large quantities. Small coals are being produced in much larger volume than the market can absorb and stocks are increasing. Other classes of coal move off slowly, though Monmouthshires and drys keep pretty steady. Coke is in good demand.

Prices, with the addition of 2s. 6d. per ton for war wage increase, are 33s. for best steams, 30s. to 31s. 6d. seconds, 30s. ordinaries, 28s. 6d. to 30s. drys, bunkered 18s. to 22s. 6d.; Best large Black Veins, 30s.; Western Valleys 29s.; Eastern Valleys 28s. to 29s.; nuts 28s. 6d. to 30s.; duff 14s. to 18s.; house coal 30s. 9d. to 33s.; No. 3 Rhonddas, large 30s. 9d., and smalls 26s.; No. 2 Rhonddas 27s. and smalls 17s. to 19s.; through and through coal 22s. to 23s. 6d.; gas coal 21s. to 25s.; and patent fuel 30s.

Very firm prices are maintained on the Hull coal market. There is the same difficulty in getting supplies that has been a leading characteristic of the market for some time past. The collieries are full of orders and are able to do little more than supply requirements, so that scarcely any free coal comes on the market. A large amount of coal goes inland, and in addition the takings of the authorities are large.

There is no change of note to record in connection with the Scottish markets, where business is quiet. The export trade continues meagre, especially from the West of Scotland and the Lothians. Fifeshire is a little better situated in regard to export. The home trade is good for all classes of coal.

Prices are, subject to the addition of 2s. 6d. per ton war wage increase, for splint coal 28s. to 30s.; Hartleys 29s.; Ells 26s. 6d. to 28s.; Navigations 28s. to 30s. for screened and 25s. 6d. to 29s. for unscreened; steam coal 27s. 6d.; and nuts 21s. to 23s.

The trouble felt by the Midland coal markets is in the direction of securing sufficient supplies. Although the collieries supplying the inland manufactories and munition works are all working full time they are only able barely to meet current demands. Better time-keeping on the part of some of the men might and probably would improve the position, and efforts are being made to obtain this desired result, but so far they have not been attended with full success.

On the London coal market the colder weather has had the effect which might have been anticipated. There has been a greater demand for house coal, but not so great as it might have been, owing to the precautions taken by most consumers who were able to do so to lay in stocks during the summer and autumn. Merchants, consequently, have not been unduly pressed. The amount of coal coming forward is fairly satisfactory, though there is room for improvement in regard to the supply of house coal of the best descriptions.

SHIPPING AND OTHER MEETINGS.

Dec. 18 (7 p.m.).—Khedivial Mail Steamship and Graving Dock Company (Limited), Westminster Palace Chambers, Victoria Street, E.C., at 12 noon.

COMPANY MEETINGS.

Blyth Shipbuilding & Dry Docks Co., Ltd.—The annual meeting was held in Newcastle on Saturday last. The Chairman (Mr. W. S. Vaughan) made the gratifying announcement that it was proposed to capitalise the reserve fund and pay off the £2 liabilities on the £10 shares, when it would then be possible to split them into £1 shares, thus making them more marketable. The company's shipyard was very full of work, and he thought there was a very successful year in front of them. The pre-war contracts had all been wiped off during the year under review and they were very glad to see the last of them. In the report, which showed a net profit for the year ended September 30 last of £61,611 and recommended payment of an ordinary dividend of 10 per cent., less income-tax, it was proposed to carry forward £54,211 to meet Exchequer payments, &c. The directors had decided, however, to recommend that £5,000 of that amount should be placed to reserve, making the total reserve fund £37,000, with which it was proposed to deal as already stated. In reply to questions, the Chairman stated that a new site secured by the company was now being laid out as a shipyard and the first three berths were being prepared. In about six or eight months they expected that yard to be in full working order. As to the suggestion that dividends should be paid free of income-tax, that would mean the expenditure of 25 per cent. in dividends. If it could be done, however, he would support the proposal.

The report was adopted.

London-American Maritime Trading Company, Ltd.—The annual general meeting was held on December 6, at the Great Eastern Hotel, Liverpool Street, London, E.C. The Earl of Wemyss, chairman of the company, presided.

The Secretary (Mr. J. Ernest Wilkins) read the notice convening the meeting and the auditors' report.

The Chairman, in moving the adoption of the report and accounts, said he was glad to think that the splendid part that the mercantile marine had taken in the war had been fully recognised by the Government. He thought it quite impossible to over-estimate the share they had borne in the worst part of the war, and that the heroism of the men who daily face the perils of submarine piracy could not be over-estimated, and he could not help paying his own tribute of approbation to the sturdy patriotism which the Seamen's Union had shown by declining to have any "truck" with cosmopolitan pacifists. He was sorry to say that their fleet had borne its full share of the losses by submarines. No fewer than four of their ships had been sunk by the enemy, and two others had been damaged; and 15 lives, including the master of one ship were sacrificed. When they started business all their ships were under time charter with the Rio Company—a most excellent arrangement when freights were low, but a very bad one indeed when freights were high, because not only were they unable to take advantage of the high freights, but they had to pay an enormous sum for insurance. The insurance they had had to pay this year amounted to £100,000. As he said last year, they took over the Leander Steamship Company, and the result of that policy had been that the Leander Company had brought into dividend £48,435. The Leander Company consisted of four vessels and stood as an asset of £331,711, representing the cost price of the shares. That company owned four vessels, one of which, the ss. *Marie Elsie*, was subsequently sold to London-American Maritime Trading Company, Ltd., in order to release funds in the hands of the trustees. The assets acquired by the purchase of the company, exclusive of steamships, consisted of cash and debts due to the company amounting to about £120,000, and the ss. *Marie Elsie*, transferred to London-American Maritime Trading Company at £55,000, made with the cash assets of £120,000, a total of £175,000. The difference between that and £245,758 4s. 7d., shown in the balance sheet as a liability due to the Leander Steamship Company, Ltd., from London-American Maritime Trading Company, Ltd., represented matters of account between the two companies. In practice the London-American Maritime Trading Company, by the purchase of the shares of the Leander Company, acquired three vessels after transferring the *Marie Elsie* to London-American Maritime Trading Company, and took over cash assets and good debts equivalent to £175,000. They had, also, during the past year, bought the ss. *Benwood*, which was not under time charter, and that had done very well for the company. With regard to the debentures, on July 31, 1917, they stood at £81,880, and had been reduced by September 25 to £66,750. At that date the company deposited with the trustees for the debenture-holders a sum of £72,000 for the redemption of all outstanding debentures and the payment of premium and interest thereon, and in consequence the ships were released from mortgage to the trustees. Out of the sum of £72,000 a further drawing of debentures had taken place, and the balance outstanding at the date of the meeting was approximately £54,000; so practically the debentures were wiped off. The Chairman then stated that the reserves at the present moment might be called £80,000. There was a large sum for sundry debtors amounting to £186,785. On the year's trading there was an available balance of £41,331, after paying the £20,000 to reserve.

Mr. William Petersen (the manager) said that the restrictions put upon them from time to time were very serious, but he had no complaint to make as far as any Government restrictions had been enforced in connection with their fleet, because it was a necessity for the country to commandeer all they could to increase the fighting force, and they had no right to complain until the war was over. It was a question of coming in and winning the war and fighting all round. They had lost a great many ships and there was not one of the remaining ships of the fleet under his control that had not had a scrap with the enemy and stood up to him. They had come home with a few holes in the funnels, but they had come home with the ships. They had some captains who had lost their ships, and who had been forced by the Germans to give their parole—that was to say, that if ever they were found at sea again they would be shot at sight. He therefore said to them, "As long as you are on parole, keep your parole. I will not take the responsibility of sending you back to sea, but the company, subject to directors and shareholders agreeing, will give you half pay until such time as you get other employment"; and that was what had been done.

Mr. Frederick Last seconded the motion, which was carried.

COMPANY REPORTS AND DIVIDENDS.

Kestell Steamship Company, Ltd.—The managers have declared an interim dividend of 10 per cent. (actual) free of income tax.

Chadburn's (Ship) Telegraph Company, Ltd.—The directors have declared an interim dividend of 4 per cent. (actual) less income tax.

International Mercantile Marine.—A Reuter message from New York states that the directors have declared a dividend of $10. The accumulated reserves are reduced to 72 per cent.

British Steamship Investment Trust.—An interim dividend of 15 per cent. has been declared and a bonus of 10 per cent. on the deferred stock, payable January 1, less tax, the same as a year ago.

Oceanic Steam Navigation Company, Ltd.—The directors announce that the numbers of the 4½ per cent. first mortgage debentures drawn for redemption will be paid at par on December 31, at the Banking House of Glyn, Mills, Currie & Co., 67, Lombard Street, London, E.C.

Aberdeen, Newcastle & Hull Steam Company, Ltd.—The report for the year ended September 30, states that the amount at the credit of profit and loss account is £3,800, from which a dividend of 1s. per share (free of income tax) was paid in May last, amounting to £1,192. The directors now recommend the payment of a further dividend of the same amount, free of tax, leaving the sum of £1,416 to be carried forward.

Thomas and Appleton Steamship Company, Ltd.—A resolution for the voluntary winding-up of this company was passed at an extraordinary meeting of the shareholders, held on Saturday. The company's steamer having been lost, it was decided to realise and distribute the assets. It was resolved to give the management £10,000 compensation, and the shareholders will receive from £35 to £40 per £10 share.

Mitre Shipping Company, Ltd.—The accounts for the year ended June 30 show, after placing £20,000, against £25,000, to general reserve, a net profit of £41,583, against £49,422. The previous provision made for excess profits duty proved to be £7,249 more than was required for the purpose. It is considered that this available amount will probably be sufficient to cover the liability for excess profits duty for the current year. Dividends representing 10 per cent. per annum on the share capital subscribed, have already been paid, amounting to £25,000, leaving a balance of £40,084 to be carried forward. The directors do not recommend the payment of any further dividend for the period under review. For the preceding year 15 per cent. was paid and £25,061 carried forward.

Union Steamship Company of New Zealand, Ltd.—A notification from the head office in Dunedin, New Zealand, states that the annual meeting will take place on December 14, when the directors will recommend the payment of a final dividend of 6 per cent. on the ordinary shares. An interim dividend of 4 per cent. on the ordinary shares was paid on May 31 last. A final dividend of 2½ per cent. on the preference shares will also be paid, making, with the interim dividend paid on May 31, a total distribution of 5½ per cent. for the year on preference shares.

Khedivial Mail Steamship & Graving Dock Company, Ltd.—The report for the year ended June 30 last states that trading profit, including Government subsidies and other receipts, after providing for excess profits duty and income tax, amounted to £51,505. Depreciation takes £18,000, and the net profit is £24,062, to which has to be added £13,101 brought in. The directors recommend a final dividend on the ordinary shares at the rate of 10 per cent., leaving to be carried forward £21,666. A number of the company's ships have been used in various capacities in the service of the country. Others have traded between Egypt and the United Kingdom.

COMPANY REGISTRATIONS.

Ryburn Shipping Company, Ltd.—Capital, £200,000, in £1 shares. Objects: To acquire or build and turn to account steam and other ships and vessels, and to carry on the business of shipowners, ship and insurance brokers, managers of shipping property, freight contractors, carriers by land and sea, lightermen, forwarding agents, ice merchants, refrigerating store keepers, &c. Signatories :—

H. W. Fordham, [illegible] Gertrude Gardens, Green Lane, Goodmayes, Essex.
G. W. H. Neill, 83, Kingscourt Road, Streatham, S.W., clerk.

The first directors are to be appointed by the subscribers. Registered office: 6, East India Avenue, E.C. Private company.

Orb Marine Insurance Company, Ltd.—Capital, £500, in £1 shares. Objects: Marine insurance agents, brokers and underwriters, &c. Power is also taken to negotiate and effect (directly or indirectly) insurance on aerial conveyances. Signatories :—

F. Bricolay, 32, King Street West, Manchester, certified accountant.
J. B. Domakin, 33, King Street, Manchester, solicitor.
C. Eyre, 33, King Street, Manchester, solicitor.

The first directors are to be appointed by the subscribers. Solicitors: J. B. Domakin & Co., 33, King Street, Manchester. Private company.

Meteor Insurance Company, Ltd.—Capital, £20,000, in £10 shares. Objects, to carry on the business of marine and transit insurance in all its branches, &c. Signatories :—

B. Jones, Lloyds Bank Chambers, Middlesbrough, iron merchant.
T. H. Donking, Maritime Buildings, Middlesbrough, shipowner.
W. Burn, 12, St. Helens Place, E.C., shipowner.
D. Hudson, Maritime Buildings, Middlesbrough, shipbroker.

The first directors are R. A. Constantine and T. H. Donking. Solicitors, Jacksons & Monk, 13, Queen's Terrace, Middlesbrough. Private company.

G. Hewson, Ltd.—Capital, £5,000, in £1 shares (4,000 5 per cent. cumulative preference). Objects, carriers, railway and forwarding agents, bonded and general carmen, boat and ship owners, &c. Signatories :—

H. Durell, 191, Bishopsgate, E.C.2, merchant.
H. H. Durell, 191, Bishopsgate, E.C.2, merchant.

The first directors are H. Durell (chairman), H. H. Durell and G. B. Durell. Registered office, 191, Bishopsgate, E.C. 2. Private company.

British and South African Insurance Company, Ltd. Capital, £100,000, in £1 shares. Objects, to carry on the business of marine insurance in all its branches. Signatories :—

G. E. [illegible]
R. Keedwell, 183, Croydon Road, Anerley, S.E.20, law clerk.
W. A. [illegible]
Violet M. Pierce, 124, Windsor Road, Forest Gate, E., law clerk.
E. Hargreaves, 20, Bourne Road, Crouch End, N., company secretary.
E. Hull, 9, Bagshot Road, Bush Hill Park, N., company secretary.
I. M. [illegible]

The first directors are: J. A. Ewing, G. E. R. Adair, H. H. Knights, and R. Sewell. Registered office: 35, Throgmorton Street, E.C. Private company.

QUESTIONS IN PARLIAMENT.

Protection against Submarines.

Mr. Tillett asked the Secretary to the Admiralty on December 5 whether he was aware of the serious loss of mercantile tonnage, owing to the lack of destroyers; and whether naval strategy should be reviewed to concentrate on more effective anti-U-boat warfare and the safer convoying of merchant shipping.

Dr. Macnamara: I can assure my hon. friend that the Navy gives all the protection its resources and duties permit.

Mr. W. Thorne: Is there any truth in the statement that the major part of the ships that are now being sunk by the U-boats are in the Irish Channel, and does the right hon. gentleman think that it is sufficiently protected at the present time?

Dr. Macnamara: I cannot say anything as to the former part of the question, but the Navy is doing all it possibly can with its resources.

Mr. G. Lambert: Has the right hon. gentleman any available information with regard to the destruction of hostile submarines?

Dr. Macnamara: No; I cannot add anything to what has already been said.

Loss of a Meat Cargo.

Sir Owen Philipps, on December 10, asked the Parliamentary Secretary to the Shipping Controller, whether the cargo of meat which was lost recently by the sinking of a steamer after leaving Plymouth could have been discharged at that port; whether accommodation existed at Plymouth for the storage of meat; and, if so, whether such accommodation could be materially increased.

Sir L. C. Money: The meat cargo of the steamer in question could have been discharged at Plymouth, but the results would have been very unsatisfactory, as is shown by the experience of previous cases. There is a small amount of cold storage accommodation at the port. The whole question of cold storage accommodation at this and other places is being dealt with by the Food Controller, and I understand that over 9,000,000 cub. ft. of additional cold storage space are under construction or in contemplation.

Establishment of National Yards.

Mr. G. Lambert, on December 10, asked the Chancellor of the Exchequer, whether it was his intention, as guardian of the public purse, to allow the Admiralty to undertake the establishment of new shipbuilding yards without the House being consulted, especially as in experienced quarters the opinion was held that these new national yards, by withdrawing labour, machinery and material now required in private yards, would actually retard rather than advance the provision of tonnage.

Mr. Bonar Law: The policy of the Admiralty has been announced to the House. The necessary funds for the proposed new works are obtained from the Vote of Credit and hon. members will have the usual opportunities of expressing their views on the matter.

Mr. G. Lambert: Has the House had any opportunity of expressing its opinion on this matter? Is the right hon. gentleman aware that the private shipbuilding yards can increase their output by 25 per cent., if they had sufficient labour and materials?

Mr. Bonar Law: As regards the last part of the question, that point of view was considered not only by the Admiralty but by the Cabinet, and the decision was come to that other yards were necessary. As regards the first part, no executive act would be possible if we had to come to the House every time.

Mr. G. Lambert: Is it not the case that the matter is so important that the House ought to have been first consulted before any national scheme [illegible]?

Mr. Bonar Law: No. I do not think so. The Government adopted the best method in its opinion to get the ships. If we had to have a note each time, it would be impossible to get on with business.

Liverpool Bay.

Mr. Houston asked whether the Secretary to the Admiralty could give any assurance that better protection would be afforded British shipping against the operations of enemy submarines in Liverpool Bay and the adjoining waters.

Dr. Macnamara: The forces available for the protection of shipping are used to the best possible advantage, their disposition [illegible]

Mr. Houston: [illegible] operations have been going on here for quite a considerable period; that there is a strong feeling of indignation growing up in Liverpool

about it: and will he see that some measures are adopted to give greater protection?

Dr. Macnamara: I can only repeat that the resources at our disposal are used to the very best advantage according to our ability to meet the demand. We can do no more than that.

Convoy and Delay.

Mr. Houston asked whether the Secretary to the Admiralty was aware of the delay to ships and loss of the use of mercantile tonnage by the present system of convoy.

Dr. Macnamara: Yes, Sir. Some delay to shipping must necessarily result from any system of convoy sailings.

Mr. Houston: I do not wish to be severe on the Admiralty, but is not the right hon. gentleman aware that there have been many inefficient methods adopted up to the present, and that steamers are kept waiting at least 10 days for convoys, and that convoys have been sent out, notwithstanding what the Parliamentary Secretary to the Shipping Controller says, with fast and slow ships running together, with the result that the convoys go along at the rate of four or seven knots an hour.

Dr. Macnamara: If my hon. friend has any views as to convoys not being worked as efficiently as they might be, I shall be very glad to have them, and submit them to my naval advisers. I have already taken note of his suggestion, which I will represent to my advisers.

Mr. Houston: I do not dissent from their being all at one speed, but from the speed of about four knots an hour for both fast and slow boats.

Mr. Holt: In view of the widespread impression that there has been an avoidable delay, would it not be a good thing to have a friendly consultation with important shipowners?

Dr. Macnamara: I will certainly make that representation. My hon. friend knows there have been such consultations already, and I am not sure that he has not been present at them, and we are much obliged to him for his assistance. If he can help us further as an expert, by all means let us have his advice.

Output of Standard Ships.

Answering Mr. Houston on December 11

Sir L. C. Money said: The number of standard steamers completed and started on voyage, up to November 30, was seven. Their respective gross register tonnage was 5,173, 5,167, 5,170, 5,204, 5,174, 5,170, and 5,166. One vessel has been sunk, her gross register being 5,173 tons. The answer necessarily gives partial, and, therefore, misleading information. It may be well to add, therefore, that the new tonnage completed in Novembe was very much greater than the tonnage of standard ships completed, and was within measurable distance of the losses by enemy attack.

Mr. Pringle: Are we to understand that it is never the policy of the Government to give misleading or partial information?

Sir L. C. Money: The information which I have given in the answer is not only complete information, but it is of a very satisfactory kind.

Mr. Houston: After all this talk about standard ships, less the mountain only brought forth seven mice?

Sir L. C. Money: No, Sir. The hon. member must know that a very considerable number of these ships are approaching completion, and if he will repeat his question in a month or two he will find there will be a very considerable increase.

Mr. Pringle: What is the meaning of the phrase, "within measurable distance," so that we may not be misled?

Sir L. C. Money: It is impossible for me to give the precise figures for reasons which have been stated in the House. The answer conveys the truth, which is that in the month just completed, the gains by shipbuilding and purchase come within close distance of the losses caused by enemy attack.

Protection of Food Ships.

Sir L. C. Money, in giving Mr. Lough an assurance on December 6 that every practical step would be taken to protect cargoes of food, which, having been taken into port, were diverted to other destinations, said: No ship containing food has been lost on the East Coast for a considerable time past under any circumstances whatever. So well are food ships protected that the percentage of wheat bound for British ports lost in the months of September and October was: in September, 3·3 per cent.; in October, 0·7 per cent. I have not the precise figure for November, but there is no doubt that it will be equally good. Since the beginning of the convoy system, down to December 1, less than 1½ per cent. of the convoyed inward cargoes [illegible] and not to load [illegible].

NEWS PARAGRAPHS.

Trade of Swansea Harbour.—The official returns of the Swansea Harbour Trust show that last month imports amounted to 34,180 tons and exports 321,733 tons. For the past 11 months imports totalled 461,994 tons and exports 3,294,597 tons.

Government Control after the War.—Lord Joicey, President of the Newcastle Chamber of Commerce, made a strong plea for commercial freedom at the last meeting of the council of that authority. He deprecated Government control of exports and imports for three years after the war, and said they must make it perfectly clear that they could not compete successfully unless they had freedom.

Shipbuilding at Warrenpoint.—J. & R. Thompson, Belfast, have intimated their acceptance of a lease from the Hall estate for the purpose of opening a yard at Warrenpoint for the construction of ferro-concrete ships. It is expected that the new industry will employ a large number of hands. The opening of the yard is largely due to the efforts of Mr. Wm. Johnson, solicitor, and to the concessions granted by the urban council to the promoters.

Seamen's National Insurance.—At a meeting of the local committee of the Seamen's National Insurance Society (Mr. J. Stanley Mitcalfe presiding), at South Shields, a resolution was passed condemning the proposals in the new National Health Insurance Bill with reference to the increase of seamen's contributions, transfers to the Seamen's National Insurance Society and the shipowners contributions in respect of employed Lascars.

A Posthumous Paper.—More than usual interest attaches to the paper, entitled "Corrosion in Marine Boilers," which is to be read on Tuesday next, December 18, at 6 p.m., before the Institute of Marine Engineers, at the premises of the Institute, The Minories, Tower Hill, E.C. The author of the paper, Mr. D. E. Rees, was serving as engineer in a steamer which was torpedoed, and by the foundering of the vessel he lost his life. He was a member of the Institute, and among his effects was the draft of the paper which is to be read next Tuesday.

Purchase of Argentine Steamers.—The Instone Transport & Trading Company, Ltd., of Cardiff and London, have purchased the following steamers from the Argentine Republic:—

	Tons gross.	Year built.
[illegible]	542	1907
[illegible]	1,066	1,066
[illegible]	162	19[illegible]

This addition brings the fleet of the company up to five and they will be employed in the French trade.

Shipbrokers' Loss of Business.—Mr. Harold Houlder, presiding at a meeting of the Institute of Shipbrokers last week in London, said that the requisitioning of the whole of the British mercantile marine had led to a very critical position so far as shipbrokers were concerned, and had, in a great measure, deprived them of their means of livelihood. The council had been striving to arrive at some understanding with the Government Department concerned, and he had reason to believe that certain concessions on a large volume of business would be allocated for the benefit of the shipbroking profession, out of which fund or pool many would derive advantage and recognition of their services.

General Steam Navigation Company, Ltd.—The directors have issued a circular to holders of 4 per cent. first mortgage debenture stock which reads as follows:—The company has the option of redeeming the above debenture stock at par upon giving six months' notice after January 1, 1920, otherwise the stock is only repayable in the events specified in the trust deed. It is obviously improbable that the option will be exercised—at all events for many years. As, however, the company has at present available funds in hand, it is prepared to redeem the stock, free of cost to the holder, at the price of £85 per cent., the holder to receive the half-yearly interest at £2 per cent., payable on January 1 next. The Stock Exchange official quotation is 72-74 per cent. By taking advantage of this offer, holders of the debenture stock would have the opportunity of investing in National 5 per cent. War Bonds now on offer, repayable at £105 per cent. in October, 1927, yielding a rate, with the redemption premium, of about £5 7s. per cent., as against £4 14s. per cent. on the company's 4 per cent. debenture stock at 85. Forms of acceptance are to be sent in not later than December 29.

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Name and Type.	Tonnage.	Dimensions. Draught in ( ).	Sold by, to	Builders, hull and year	Machinery and builders.	Remarks.
Ceferino, ss. (single dk.) (ex *Mar-Rojo*, ex *Diana*, ex *Rhodesia*)	3,647 gr. 2,618 net 6,000 d.w.	340′ × 48′ × 26′ (22′ 8″)	Ceferino Ballesteros, Aviles, Spain, to buyers not stated	J. Priestman & Co., Sunderland (1899)	25, 41, 67 × 45 (N.E. Mar. Eng. Co., Sunderland)	Price about £400,000.
Greimay, ss. (single dk.) (ex *Neath Abbey*, ex *Kildare*)	2,340 gr. 1,502 net 3,900 d.w.	306′ × 44½′ × 20′ (19′ 2″)	Dulcia S.S. Co., Cardiff, to H. Hogarth & Sons, Glasgow	Craig, Taylor & Co., Stockton (1903)	22, 36, 58 × 39 (N.E. Mar. Eng. Co., Newcastle)	Price about £57,500. Sold in March last for about £40,500.
James S. Whitney, ss.	2,707 gr. 1,926 net	278½′ × 43′ × 29′	Eastern S.S. Corpn., Boston, Mass., to Mr. Robt. E. Miller, New York	Harlan & Hollingsworth Co., Wilmington, Del. (1900)	29, 46, 75 × 48 (Harlan & Hollingsworth Co.)	Price about £80,000.
Kulambangra, ss. (awning dk.)	2,005 gr. 1,080 net	264½′ × 37′ × 24′ (18′ 2″)	Lever's Pacific Plantations, Ltd., Liverpool, to buyers not stated	Napier & Miller, Glasgow (1910)	13½, 22½, 37½ × 33 (J. G. Kincaid & Co., Greenock)	—
Loughbrow, ss. (iron, single dk.)	691 gr. 427 net 1,000 d.w.	190½′ × 30½′ × 12½′ (14′ 4″)	Hoyle Bank Shipping Co., Liverpool, to Mr. A. J. Ashwin, London	Hodgson & Soulsby, Blyth (1883)	23, 46 × 33 (Wigham, Richardson & Co., Newcastle)	Price about £32,500.
M. J. Hedley, ss.	449 gr. 178 net 600 d.w.	165½′ × 24′ × 10′ (12′ 4″)	Hosken, Trevithick, Polkinhorn & Co., Truro, to buyers not stated	Workman, Clark & Co., Belfast (1891)	21, 42 × 30 (V. Coates & Co., Belfast)	Price about £25,500.
Neilrose, ss. (single dk.) (ex *Craigmhor*, ex *Garscube*)	3,568 gr. 2,297 net	335½′ × 49½′ × 24½′ (22′ 7″)	Woolston S.S. Co., Cardiff, to Charlton, McAllum & Co., Newcastle-on-Tyne	A. McMillan & Son, Dumbarton (1906)	25, 41, 67 × 45 (J. G. Kincaid & Co., Greenock)	—
Nikkosan Maru, ss.	5,589 gr. 4,271 net	409½′ × 54 × 27′	Mitsui & Co., Japan, to French buyers	Skinner & Eddy Corpn., Seattle (1917)	1 steam turbine (General Electric Co., Schenectady)	—
Polvarth, ss. (single dk.)	3,146 gr. 1,972 net	330′ × 48½′ × 22½′ (20′ 9″)	Polvarth S.S. Co., Cardiff, to buyers not stated	Sunderland S.B. Co., Sunderland (1909)	23½, 39, 64 × 42 (N.E. Mar. Eng. Co., Sunderland)	Price about £85,000.
Regina, ss. (single dk.) (ex *Moto*)	1,380 gr. 799 net	240½′ × 33½′ × 18′ (17′ 6″)	Rederiaktieb. Regina, Helsinborg, to buyers not stated	Palmers' S.B. & Iron Co., Newcastle (1885)	29, 57 × 39 (Palmers' S.B. & Iron Co., Newcastle)	Price about 1,500,000 kr.
Riverford, s.v. (ex *Celtic Glen*, ex *quique*)	1,941 gr. 1,859 net 3,250 d.w.	267½′ × 39½′ × 23½′ (21′ 3″)	H. Ford, Birmingham, to buyers not stated	W. Hamilton & Co., Pt. Glasgow (1892)	—	Price about £30,000.
Ryburn, ss. (single dk.)	2,974 gr. 1,848 net 5,140 d.w.	331′ × 46′ × 21½′ (20′ 6″)	J. E. Murrell & Son, W. Hartlepool, to Ryburn SS. Co., London	W. Gray & Co., W. Hartlepool (1910)	24, 38, 64 × 42 (Cen. Mar. Eng. Wks., W. Hartlepool)	—
San Antonio, ss. (single dk.)	314 gr. 173 net 450 d.w.	131½′ × 23½′ × 9½′ (10′)	Quartino, Scarlatto & Co., Montevideo, to buyers not stated	F. Barachini, Sampierdarena (1896)	17½, 33½ × 19½ (Wilson & Maclaren, Sampierdarena)	Price about £30,000.
Speedonia, s.v. (ex *Urania*)	3,283 gr. 3,087 net	330′ × 47′ × 27′	R. D. Brailli & Co., Cardiff, to buyers not stated	A. McMillan & Son, Dumbarton (1902)	—	Price about £57,000. As the *Urania* she was sold by auction "in prize" in 1915 for £16,500.
Trefusis, ss. (single dk.)	326 gr. 159 net	140′ × 22′ × 10½′	Lythgoe, Amundsen & Co., Sunderland, to buyers not stated	W. Harkess & Son, Middlesbrough (1883)	20, 35 × 24 (W. Allsup & Sons, Preston)	Price about £16,000.

FORTHCOMING EVENTS.

INSTITUTE OF MARINE ENGINEERS.—Tuesday, December 18, meeting at the Institute, the Minories, Tower Hill, London, E.C., at 6 p.m. Subject: "Corrosion in Marine Boilers," by the late D. E. Rees (member).

LIVERPOOL ENGINEERING SOCIETY.—Wednesday, December 19, meeting at Royal Institution, Colquitt Street, Liverpool. Mr. A. T. Wall, Grad.R.N.C. (Greenwich), A.R.C.Sc., M.I.N.A., on "The Need for Research Work on the Propulsion of Full-sized Ships."

INSTITUTION OF PETROLEUM TECHNOLOGISTS.—Tuesday, December 18, meeting at the Royal Society of Arts, John Street, Adelphi, London, W.C., at 8 p.m. Paper by Mr. F. H. Cunningham Craig, B.A., F.R.S.E., F.G.S., on "The Prospective Oilfields of Barbados."

SHIPPING SHARE MARKET.

There has been a slight reaction in the general tone of the shipping stock and share market in sympathy with the quiet conditions ruling throughout the Stock Exchange as a result of the uncertainty regarding the Russian situation. The news that a Cossack counter-revolution had been initiated caused the market to re-open on Monday in a better mood, but prices except in a few cases are mainly lower on the balance of the week's business since our last issue. We commented last week upon the rise in price of Clan Line shares to over 54 on reports of an amalgamation. The price has since fallen back to 47. The rumours which referred to a purchase by the Clan Line of the ships owned by the Britain Steamship Company for £60 per share are entirely untrue. No negotiations of any sort for amalgamation have been passing between the Britain Steamship Company and the Clan Line or any other steamship company. Britain shares have changed hands at over 30. Peninsular and Oriental deferred have not been affected by the issue of the accounts which were reviewed by us last week. The stock has changed hands at 336. Royal Mail stock continues to be purchased at over 120. Among the lower-priced shares officially quoted those of the Furness Withy Company and the Khedivial Mail Company have been the most active. The former shares are at 57s. after touching 60s., which price is easily the record highest of the year. The latter have been freely dealt in at around 39s. during the week end, but on the opening of the market on Monday a report was circulated showing net profits for the year of only £24,062, a final dividend at the rate of 10 per cent., making 10 per cent. for the whole year, as against 25 per cent. last year, and £21,666 carried forward as against £28,598. These figures caused some unsettlement and the price reacted sharply. With reference to General Steam Navigation 4 per cent. first mortgage debenture stock, which was last dealt in at 73½ on October 30, it is announced that the company is prepared to redeem the stock at 85 per cent. The offer is made by the company because it has funds available and it is unlikely that the option to redeem at par after January 1, 1920, will be exercised by it in view of the price on the market. This announcement means an advance in the price of the stock to 84–85, although no change in the official quotation has, we observe, yet been made. In shares only quoted in the supplementary list Prince Lines have been prominent with a further advance to about £6, which is nearly £2 ahead of the price a few months ago.

SHIPPING, SHIPBUILDING, ENGINEERING AND MARINE INSURANCE SHARE LIST.

SHIPPING.

Name.	Share and paid.	Extreme quotations, 1916.	Last ann. div. % or per share.	Yield. %	Last Quotation	Rise or Fall.
	£					
African S.S.	20	33—23½	10	7½	28	
Allan Line ... ... Deb.	100	—	4	4½	92	
Anchor Line ... Cum. pref.	10	9¾—9½	5½	5¾	9½	
Do. ... ... Deb.	Stk.	105½—102½	4½	4⅜	103	
Argentine Nav. ... Cum. pref.	1	19/6—11/-	Nil.	Nil.	24/1½	+/10½
Do. ... ... Ord.	1	14/6—5/6	Nil.	Nil.	16/9	
Australasian Un. S. Nav. Deb.	Stk.	83½—80½	4	5	80	
Belfast Steam ... ... "A"	10 (6pd.)	—	5	5	5	
British & Argen. Nav. ... Deb.	Stk.	87½—82½	4½	5¼	81	
British India Nav. ... Deb.	Stk.	94½ 88½	4½	5⅓	83	
British S.S. Invest. Trust Def.	Stk.	357—190	50*	11¾	425	
Do. ... ... Pref.	Stk.	108—105½	6	5⅝	104	
Do. ... ... Deb.	Stk.	79—77⅞	4½	6 5/16	74	
Cairn Line ... ... Deb.	Bds.	98—88	5	5½	90½–91	
Do. ... ... Ord.	1	20†	8		49/3	— -/9
Clan Line ... ... Ord.	10	32½—22½	25	5	46⅝	−3½
Court Line ... ... Ord.	£1	42/—26/-	20	13½	37/9	−1/9
Cunard SS. ... ... Ord.	1	101/—68/-	20*	5	81/6	
Do. ... Cum. pref.	Stk.	95—89	5	5½	87	
Do. ... ... Deb.	Stk.	99½—93½	4½	4⅝	99½	
Elder Line ... ... Deb.	Stk.	97¾—89½	4½	4⅜	103	
Elder Dempster ... Cum. pref.	10	20/6—18/1⅛	5½	6¼	18/-	
Do. ... ... Deb.	Stk.	92½—88½	5	5⅔	87	
Ellerman Lines ... Pref. Ord.	10	9 1/8—9½	6¼	6¾	9¼	
Do. ... Guar. pref.	10	9 1/8—8¾	4½	5⅛	8¾	
France Fenwick ... Cum. pref.	5	9⅝/5—92/6	5½	6⅛	87/6	
Furness, Withy ... Ord.	1	61/3—34/3	20*	9⅓	55/-	−4/-
Do. ... Cum. pref.	10	9½—7¼	5	6⅛	8⅝	− ⅜
General Steam Nav. ... Cum. pref.	7½	12⅝—8½	15	7⅞	22/6	
Do. ... ... Pref.	8	7⅞—6⅝	6	7⅛	7⅞	
Houlder Line ... Cum. pref.	5	83/8—67/6	5½	6⅛	80/-	
Do. ... ... Deb.	Stk.	—	4½	4⅓	93	
Houlder Bros. ... Cum. pref.	5	—	5½	6⅞	4	
Do. ... ... Deb.	Stk.	—	4½	5⅜	82	
India Gen. Nav. & Rly. ... Ord.	10	12—8¾	6	5⅝	11xd	
Indo-China N. ... Pref. Ord.	5	5 7/16—90/-	6	6⅔	95/-	
Irrawaddy Flotilla	40	—	15	5 5/16	116	
Khedivial Mail ... ... Ord.	1	37/—10/-	25	12½	34/-	−3/3
Do. ... ... Pref.	5	77/6—60/6	5½	7¼	75/-	
Do. ... ... Deb.	Stk.	94½—87½	4½	4⅝	95	
King Line ... ... Ord.	1	—	16*	9⅓	41/-	+1/-
Lamport & Holt ... Cum. pref.	£1	20/9—18/9	6	6	19/3	
Leyland (F.) ... Cum. pref.	10	8⅞—6½	5	6⅛	8	
Mercantile SS. ... ... Ord.	5	18⅝—12	40	8	24 1/16	+ 9/16
Do. ... ... Pref.	1	20/1⅛—20/-	5	6¼	15/-	
Moor Line ... ... Ord.	10	—	30	13½	22½	
Nelson Steam Nav. ... Deb.	100	98¼—97½	5	5⅛	98⅛	
New Zealand ... ... Ord.	£10	—	8	2½	32½	
Do. ... ... Deb.	Stk.	90⅜—88	4	4½	88½	
Nitrate Producers SS. ... Ord.	5	25¾—18	30	6¼	24½	
Do. ... Cum. pref.	5	—	5	5	5	
Oceanic Steam. Nav. ... Deb.	100	99—95½	4½	4⅝	96	
Orient.Stm.Nav.Co. Cum. pref.	10	9⅞—9 1/16	5	5½	9	
Do. ... ... Deb.	100	98—91⅝	4½	5⅛	88	
P. & O. S. N. ... Cum. pref.	100	100—91	5	5⅝	93¾	+ ¾
Do. ... ... Def.	100	349—270	18	5⅜	335½	−3
Do. ... ... Deb.	Stk.	71—69	3½	5⅛	68	
Prince Line	1	95/—26/-	30	5⅓	108/9	
R.M.S.P. ... ... Ord.	100	134½—97½	7	6	120	−3½
Do. ... ... Pref.	Stk.	86¼ 76½	5	6	86	+1
Do. ... ... Deb.	Stk.	89—86	4½	5⅛	80	
Shaw, Savill & Alb. Cum. pref.	5	9⅝/—88/3	5½	5⅝	85/-	
Shell Transport	1	6—4⅜	35	6	5⅝	
Do. ... Cum. pref.	10	10¼—9	5	5½	9	
Sutherland SS. Co.	£1	69/6—41/6	30	8½	70/-	
Union-Castle SS. Cum. pref.	10	7⅛—7	4½	6	7⅛	
Do. ... ... Deb.	Stk.	92½—86½	4	4⅝	87	
West Hartlepool ... ... Pref.	10	8¼—7⅝	5½	7½	7⅞	

INSURANCE.

Alliance	20 (2½ pd.)	10½—8½	12/-	7	9⅜	
Indem. Mutual Marine ...	15 (3 pd.)	12½—9¼	15/-	8	20¼	
London Assurance	25 (12½ pd.)	52½—42½	20	6	58	
Marine Insurance	25 (15 pd.)	36½—33½	45/-	6	55½	
Merchants' Marine Insurance ...	10 (2½ pd.)	7⅛—71/3	10	6	9 5/16	
N. British & Mercantile Ord.	25 (6¼ pd.)	34⅜—29	40/-	6⅔	34½	
Phœnix Assurance	10 (1 pd.)	7⅞—5⅝	40	7	7⅞	+ ⅛
Royal Exchange Assurance ...	Stk.	189½—181	10	4½	236	+ 7/16
Sea Insurance	10 (2 pd.)	19⅝—19½	10	6	27	
World Marine, Limited ...	5 (2 pd.)	61/3—35/-	5	4⅔	6	

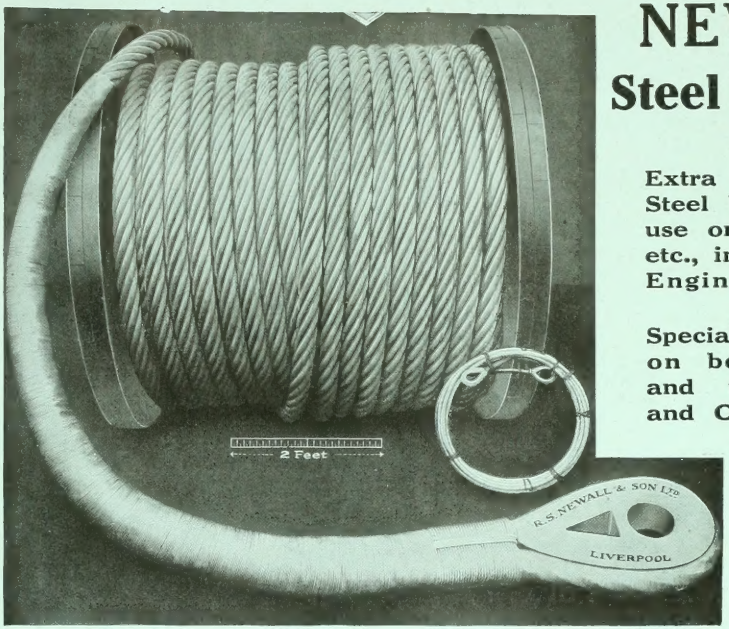
IRON AND STEEL.

Name.	Share and paid.	Extreme quotations, 1916.	Last ann. div. % or per share.	Yield. %	Last Quotation	Rise or Fall.
	£					
Babcock & Wilcox... ... Ord.	1	64/6-47/10½	15	4⅝	65/-	
Baldwins ... Cum. pref.	1	1⅛—1	5½	5⅝	20/-	
Do. ... ... Deb.	Stk.	87⅛—86½	4½	5⅛	84	
Bayliss, Jones ... Cum. pref.	1	—	6	7½	9 11/16	
Bell Bros. ... ... Cum. pref.	10	10 3/16—9 5/16	6	6	9⅛	− 1/16
Do. ... ... Deb.	Stk.	80—78⅝	5	6⅜	75⅝	
Bessemer (Henry) ... Ord.	1	29/—26/-	12½	7½	34/6	
Bolckow Vaughan ... Ord.	1	25/10½—18/-	11	7½	29/-	
Do. ... ... Cum. pref.	20	1⅛—18	5	5⅝	17	
Cargo Fleet Iron ... ... Ord.	1	23/3–13/10½	3	3½	24/-	
Do. ... ... Deb.	100	86½—84	4½	5⅜	83	
Consett Iron Co. ... ... Ord.	1	89/4½—65/3	50	11	90/-	
Dominion Iron & Steel	Bds.	83—78	5	6⅓	87	+ ⅜
Dorman, Long ... ... Ord.	1	36/—22/3	8†	—	45/-	— -/4½
Do. ... ... Deb.	Stk.	97⅛—97	4	5⅛	73	
Ebbw Vale Steel & Iron Ord.	1	28/7½—19/-	12½	9⅛	29/-	
Guest, Keen & Nettefids Ord.	1	71/3—80/-	15*	9⅓	87/-	
Do. ... ... Cum. pref.	5	5⅛—5⅓	5	4⅝	5⅛	
Do. ... ... Deb.	Stk.	82⅝—80½	4	5⅛	79	
Hadfield's Steel Foundry Ord.	1	82/6—69/-	30	5⅔	105/-	
Ibbotson Bros.	5 (4 pd.)	8—6	7½	4⅔	6½	
Jessop (W.) & Sons ... Ord.	5 (4 pd.)	9—8	15*	6½	9⅛	
Lanarkshire Steel Cum. pref.	10	—	5	7⅛	7	
Lysaght (J.) ... Cum. pref.	1	22/7½—20/3	6	6	20/-	
Do. ... ... 2nd pref.	1	21/1⅛—21/-	6	6	20/-	
Manganese Bronze ... Ord.	1	—	6	11	1⅛	
Do. ... ... Cum. pref.	1	—	6	8	2	
North-Eastern Steel ... Deb.	Stk.	—	4½	—	—	
Palmers Ship & Iron "A" ...	1	12/6—9/-	Nil.	Nil.	13/4½	
Scott (Walter) ... ... Ord.	1	26/3—17/9	15	10	30/-	
Do. ... ... Pref.	1	16/10½—16/3	10	7½	19/-	
Sheffield Forge ... ... Ord.	1	—	15	4½	66/-	
Shelton Iron & Steel ... Ord.	1	20/4½—15/-	7½	6	23/4½	
Do ... ... Deb.	100	94—92½	5	5½	91½	
S. Durham Steel & Iron Ord.	1	37/6—27/-	10	4½	38/4½xd	− -/1½
Do. ... ... Cum. pref.	1	21/—19/-	6	6⅓	20/-	
Do. ... ... Deb.	Stk.	82—80	4½	5⅝	80	
Steel Co. of Scotland ... Ord.	10	—	10	10	12/1/-	
Stewarts & Lloyds Pref. ord.	10	18½—17	10	6½	16	
Do. ... Cum. pref.	10	—	6	4½	8	
Stone (J.) ... ... Cum. pref.	10	—	5	6⅓	8	
United States Steel ... ord.	100$	144⅜—83½	8	7¢	101 1/16	
Do. ... ... Cum. pref.	100$	128½—112½	7	6	113½xd	
Vickers Ltd. ... ... Ord.	1	40/3—33/6	12½	5½	42/6	+ -/6
Do. ... ... Pref.	Stk.	93—85	5	6	82	
Do. ... ... Deb.	Stk.	83—75	4	5⅓	77½xd	
Weardale Steel ... Def. ord.	1	34/—19/1½	19½	13⅜	31/-	
Do. ... ... Cum. pref.	1	23.6—17/6	6	5	24/-	
Do. ... ... Deb.	Stk.	70½—69½	4	6⅓	61½	
Workington Iron & Steel Ord.	1	24/3—14/3	10	9⅛	28/3	+ -/4½

SHIPBUILDING AND MARINE ENGINEERING.

Armstrong, Whitworth Ord.	1	43/—34/6	12½	5⅞	42/-	− -/1½
Do. ... ... Cum. pref.	5	7⅝—67/6	4	5⅞	69/-	
Do. ... ... Deb.	Stk.	80—78	5	6⅜	77	
Beardmore (W.) ... Deb.	100	99—92	4½	5	91	
Brown (John) ... Ord.	1 (15s. pd.)	27/3 – 20/6	12½	7½	27/7½	− ½
Do. ... ... Cum. pref.	10	10—5⅞	5	5⅞	8¼	
Cammell Laird ... ... Ord.	5	7—98/-	10	7½	7	
Do. ... ... Cum. pref.	5	88/—76/3	5	6⅔	82/6	
Do. ... ... Deb.	100	93½—85	4½	5⅜	85	
Dunlop (Jas.) ... ... Ord.	1	19/7½-13/4½	10	6⅔	22/7½	
Do. ... ... Cum. pref.	1	17/1½-16/4½	6	7½	17/6	
Fairfield Shipbldg Cum. pref.	10	8⅝—8⅛	6	7½	8⅛	
Fleming & Ferguson ... Ord.	10	—	10	7	14½	
Gray (Wm.) ... ... Deb.	100	100¾—99½	4½	4½	100½	
Hawthorn (R. & W.) Leslie Ord.	10	15½—14	12½	5	25⅝	
Henderson (D. & W.) Cum. pref.	1	—	5	9	9 1/16	
Richardsons Westgarth ... Ord.	1	7/9—2/10½	Nil.	Nil.	8⅛	−1/4½
Do. ... ... Cum. pref	1	15/7½—8/-	Nil.	Nil.	17/10½	− -/4½
Do. ... ... Deb.	Stk.	69—67½	4½	6⅞	66	
Simons (W.) ... Cum. pref.	10	—	5	5	9½	
Swan, Hunter & W. R. ... Ord.	1	35/6—26/-	12½	5⅜	50/9	+ -/9
Do. ... ... Cum. pref.	1	18/9—17/-	5	5⅛	17/-	
Do. ... ... Deb.	Stk.	82—80½	4½	5⅝	78	
Thornycroft (John I.) ... Ord.	1	38/9—21/9	17½	8⅔	40/-	
Do. ... ... Cum. pref	1	18/6—16/3	6	6½	18/9	+ -/1½
Do. ... ... Deb.	100	95½—88	5	5⅝	85	
Wallsend Slipway ... Ord.	1	2—1⅛	10	5	2	
Do. ... ... Cum. pref.	1	1—1	5	5	1	

* Including bonus. † Also 20 % in shares. ‡ Treasury price.



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This plant automatically starts up and stops at any predetermined time daily, to indicate that it is in working order.

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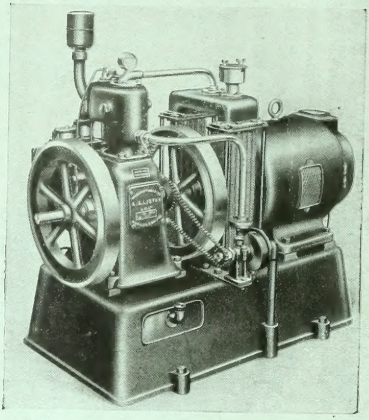

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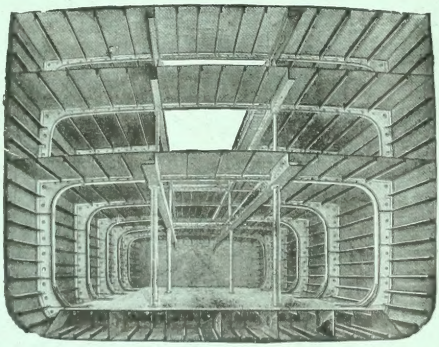
Improved Ventilation.

Reduced Cost of Maintenance.



Reduced Vibration.

800 Vessels Built or being Built, representing about 6,000,000 gross reg. tons.

310 Bulk Oil Carriers, representing about 2,800,000 gross reg. tons.

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